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MAX AMS

FOUNDER

Max Ams Machine Co., Mount Vernon, N.Y.





# The Seal of Safety

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## YEAR BOOK

OF THE

**MAX AMS MACHINE CO.**

**MOUNT VERNON NEW YORK**

**CHAS. M. AMS, President**

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## SALUTATORY

**T**HIS first edition of "The Seal of Safety" for the year 1918, we trust will prove interesting to the Cannery and Food Packers, on account of the general information contained therein. We have tried to present in the least possible number of pages, for ready references, interesting facts and figures relating to the industry.

Realizing that this first attempt is necessarily quite incomplete, we ask your kind indulgence and assure you that any criticisms or assistance you may give us for future editions will be gratefully received.

We are indebted to numerous friends and well-wishers, including Secretary F. B. Correll, of the National Cannery Association, Dr. Bitting, *The Trade, Canner, Pacific Fisherman, California Fruit Grower, Western Canner*, and others, for statistical and other information of valuable assistance.

Cordially yours,

THE MAX AMS MACHINE CO.,

Chas. M. Ams, *President*.





## THE CANNING INDUSTRY







## THE CANNING INDUSTRY

Preserving is an art, canning is a science, and today we look for the scientific production of things and its relation to the health of the community. The Constitution of the United States guarantees its citizens "life, liberty and the pursuit of happiness." Why did it not include "health"? Possibly the politicians of one hundred and thirty years ago were just as busy as the politicians of today, and considered "health" as only a means, not as an end to happiness. But what the politicians left undone, the canner featured more than one hundred years later to the end that everywhere everything is done nowadays to protect the health of the individual and the community. Strenuous sanitary laws are passed, sanitary and health commissions are created, and along all lines the scientific application for the betterment of conditions of humanity, the prolonging of life, the elimination of contagious diseases, and the improvement of food products is being pushed on a resistless wave. While the canner has been the pioneer of this scientific activity, he has also alone been the one to bring his product before the public. He has not had a press agent. He has not had a subsidized press; in fact, he has until quite recently had the full measure of abuse from the entire press, for wherever there appeared to be any incident relating to the canning of food products, the press was the first to present the worst side of the case, rarely if ever giving the canner the benefit of the doubt, or emphasizing the 98 per cent of meritorious and wholesome food products that he puts up.

It is a strange phenomenon in human nature that while the daily press, the magazines, text-book writers, lecturers and authors have devoted miles of type to the channels of electricity, mechanical arts and allied industries, all of which have been instrumental in their way toward improving and bettering the condition of mankind, very little, in comparison to all this, has been the space devoted to one of the greatest industries in the world, and one as far-reaching in its work and mission, and this is the Canning of Food Products; in fact, the canning of all kinds of products. Great as the development of food products has been, and the tremendous strides made in the direction of



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pure foods and sanitary preserving of eatables, the type pushers invariably have stood ready with a club or a hammer to strike it a knockout blow at every opportunity. It seems almost incredible, but it is an indisputable fact that the success and progress of the canning industry today has been due and accomplished by sheer pluck, hard and consistent stick-to-it and always-at-it policy of the canners themselves and the articles produced. They, the canners, had no advertising managers or exploiters to fool and mislead the public. They had to produce the goods, and the goods made the canner, and made him both ways—a rich and distinguished and prosperous manufacturer, or a poor and condemned individual. For be it understood that this particular industry is not free from the faker and the criminal, but in proportion to the capital invested, people employed and quantity produced, we venture to assert that there is less of the criminal class here than in other fields of industry. Commerce and merchandizing are controlled by large corporations, and while it has been necessary to frame special legislation to control the latter, it was the canners themselves who took the initiative to have stringent laws enacted for the purpose of bringing to a higher standard the quality of all food products.

The canner must now take another step forward, the National Association of Canners must provide a label to be placed upon each can of food products, in order that the public may know whose product is guaranteed. The Association can control this label and issue it only to canners who in every way comply with all the pure food laws. When this is done the unwholesome canners and canneries will be driven from the market, and the public will soon be made acquainted with the fact—buy only the cans with the label.

With these few words of introduction, and with the purpose of bringing to a clearer understanding the relations between producer and consumer, and possibly enlisting those who for various reasons have prejudiced consumers against the canning industries and who have wilfully and spitefully abused everything in the preserving industry, these pages may open up a new vision. All that the canner asks for is fair play.

The art of preserving food is as old as the earliest pages of recorded history. It is an established fact of history that



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various kinds of preserved foods have come to light in the excavations of ancient ruins by archeologists of the present day. Has it ever occurred to the reader what a debt of gratitude the world owes canned foods and the canning industries? If the art of hermetically sealing fruits and vegetables had never been discovered and brought to its present high state of perfection, and the humble can had never been invented, what the cost of living would be may readily be surmised, and yet more than three billions of cans of food were put up during the past year, without a single bona fide case with injurious results.

In bringing together in condensed measure the varied and experimental stages of the canning industry from what we know of it, we can only refer in a fragmentary way to the progress made during the hundred years that the art of hermetically sealing cans, or receptacles for food products, has been in use.

While there has been no change in the basic principles of the canning industry, there has come about the extensive application of machinery, new methods of sanitation, changes in containers, the influence of bacteria, etc. These have been admirably described by A. W. Bitting in a bulletin issued by the Bureau of Chemistry.

Canning is the art of preserving a food product in hermetically sealed container, the preservation being accomplished through sterilization by means of heat. In its highest sense the object is to retain the food in as nearly a fresh condition as possible as to appearance, palatability and nutritive quality, or in the condition in which it is usually consumed. It affords the means of having wholesome succulent vegetables or other products at all times and in places where otherwise the cost or the labor of preparation would be prohibitive. The art was evidently slow of development and the result of various dissociated experiments. The real foundation was laid by Spallanzani, who in 1765 made experiments which disproved the then popular theory of spontaneous generation. These consisted in placing various nutritive liquids in tubes, sealing them and then boiling in a water bath for an hour. He showed that the liquids remained unchanged as long as the seal was unbroken and free from external air. He therefore concluded that "eggs" which cause spoilage are somehow carried in the air. This was canning on a very small scale. The experiments also demonstrated



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that there was a difference in the effect of moist and of dry heat; that whereas life was destroyed by water at a temperature of 45 degrees Centigrade, in the dry state 80 degrees Centigrade was necessary.

The first practical application of this discovery was made by Scheele, a Swedish chemist and apothecary, who preserved vinegar by boiling it in jars or bottles and sealing it at once. This was in 1782, and at that time the keeping of good vinegar for extracts and other pharmaceutical processes was of much greater importance than can be realized now. There is no record, however, that Scheele carried his work further than the preservation of the pharmaceutical product.

In 1795 Nicholas Appert, a Frenchman of exceptional training in experimental work and of large practical experience in confectioneries, kitchens, breweries and distilleries, began work on food preservation. His work was stimulated by offers of reward on the part of the government for better methods of preparing foods for the army and navy. According to Appert's own story, he was unsuccessful until 1804. At that time he learned the secret of preserving by heat in a sealed container, then continued his experiments until 1810 when he published his methods in detail. According to the records, he succeeded with many products and produced results which it would be difficult to improve upon at this time. The essential points in the method described by him are that the food to be preserved is placed in glass bottles with water and corked carefully, after which the bottle is placed in a water bath and heated for a period depending upon the nature of the food used. At the end of the heating period the bottles are removed from the bath and cooled. By this method the temperature attained was from 190 to 200 degrees Fahrenheit, the maximum being 212 degrees Fahrenheit. He says, "I chose glass as the matter most impenetrable by air and have not ventured to experiment with vessels of any other substance." Appert's publication won for him the prize of 12,000 francs offered by the French Government and general recognition as the founder of the art of canning, and later a monument in bronze was erected in Paris, to perpetuate his memory.

Appert's theory that certain elements or gases in the air cause decay and fermentation, and that by the exclusion of the



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air food substances would remain indefinitely pure and sweet, was dispelled soon after by other chemists. Appert's theory was set aside, and we beheld the amazing demonstration of Koch, Tyndall, Pasteur and Sir Joseph Lister. The germ theory was their discovery which established that the causes which produced putrefaction changes or fermentation in our food are minute organisms known as bacteria. They are ever present in almost every substance and only by the application of intense heat they are made sterile and their activity entirely destroyed.

In 1807 a Mr. Saddington presented a paper before the English Society of Arts, entitled "A Method of Preserving Fruits Without Sugar for House or Sea Stores." Mr. Saddington did not claim the discovery of the method, and being a traveler it is supposed that he learned the general facts abroad, though he may have made some modifications. His method was essentially as follows: The fruit was placed in bottles and loosely corked. The bottles were placed in cold water up to the neck, heat applied gradually until 75 degrees Centigrade was reached, and then kept at that temperature for an hour. After this, the bottles were filled with boiling water, corked lightly and laid on their sides to swell the cork. Later the corks were cemented.

Peter Durand, early recognizing the possibilities of preserved foods, took out an English patent in 1810, covering both the preserving of "animal, vegetable and other perishable foods," and also the container, covering "vessels made of glass, pottery, tin or any metal or fit materials." The essential feature of the preservation was that the food be heated and hermetically sealed in the container. This is the first record of using the tin can as a container; therefore its invention is attributed to Mr. Durand. It is known, however, that even previous to 1800 the Dutch put up fish in tin, though their methods were not those now generally recognized for canning. The fish, on being caught, were dressed at once, boiled for a short time in salt brine and smoked for two days, after which they were put in the cans, covered with hot butter or olive oil, and sealed.

The tin can was practically coincident with the art of canning.

The first improvement in the tin can, adapting it especially to canning purposes, was made in 1823 by Pierre Antoine Angibert, a Frenchman. His improvement consisted in first putting



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the fruit and water in the can and covering it with a lid having a hole in it. The cans were set in a water bath and boiled for some time, after which the hole was closed with a drop of solder.

All the early tin cans were made by what was known as the plumb joint; that is, the edges along the sides were butted together and soldered, as were also the two ends. The entire work was done with a pair of scissors and a soldering iron. Only a few cans could be made in a day, one hundred being considered a very large number for one workman. It was not until 1847 that Allen Taylor invented the stamped can with the extension edges. In 1849 the pressed top was added as an improvement.

From the beginning, bottles were too costly and broke too easily to be used for the cheaper articles of food. The earthenware jars were heavy and not sufficiently well glazed. The tin can lent itself to commercial purposes best, but it was expensive and the evolution of its manufacture was slow. At present it is manufactured by automatic machinery at low cost and in enormous quantities.

The first canner in this country was Ezra Daggett, who learned the trade abroad. He and Thomas Kensett packed a few salmon, lobsters and oysters in New York in 1819. The next year William Underwood and Charles Mitchell began operations and a factory was opened in Baltimore.

But little progress was made until 1825, when Thomas Kensett and Ezra Daggett obtained a patent from the United States on an improvement in the art of preserving. But we learn that canned goods were packed in New York by Thomas Kensett as early as 1819, in which year he entered into partnership with his father-in-law, Ezra Daggett. The above patent, which bears the autograph signatures of the then President of the United States, James Monroe, the Secretary of State, John Quincy Adams, and the Attorney-general, William Wirt, in its specifications mentions canned goods in hermetically sealed cans and in such a way as to leave us to infer they were not then considered novel. Thomas Kensett is assumed to have learned the art of preserving in England, before emigrating to this country.

We have various records of the art of preserving from 1832, in which year one Philip Jones, a native of Massachusetts, is mentioned as having put up fruit by a particular process. It is not known just what this process was, but it is believed to have



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been the same as that employed by Appert. We learn of the catching and preserving of fish in 1835, and, although we do not find by what process they were preserved, we believe it was by the use of brine, as at present.

In 1839 Isaac Winslow began experimenting with the canning of corn in Portland, Me. His early efforts were mostly failures, but he had a persistence worthy of any cause, and by continuous work he felt warranted in 1852 in asking for a patent. So skeptical was the Patent Office that letters were not granted until 1862.

At various periods up to 1840, the art of preserving in hermetically sealed packages is mentioned, but it was far from being general, being known to only a few; the most progress was made between the years 1840 and 1850. In 1847 general packing began, that is, the importance of the industry was just beginning to manifest itself, and it was this year that tomatoes were first packed for commercial purposes, and New Jersey was the place. In 1841 the first real fish cannery was established at Eastport, Me., the product being lobsters and mackerel, and by 1860 there were a number of canneries on the coast, handling both fish and vegetables. The first cannery in the Central States seems to have been established in the early sixties in Cincinnati, closely followed by one at Indianapolis. Canning was begun at San Francisco in 1856, and in the Alaskan waters in 1878.

## THE SARDINE INDUSTRY

The sardine industry of the United States is very young, having been started about 1875. In a generation it has grown to be one of the great wealth producers of the country. The annual pack amounted to 2,250,000 cases of one hundred cans each. Credit for the initial work of starting the industry is given to Mr. Julius Wolff, who undertook the first commercial packing of sardines in New York in 1877. For the first half-dozen years, the business was weak, but afterward it developed rapidly.

The Civil War gave the first great impetus to canning in this country. That event showed the enormous advantage of having canned foods and emphasized their general superiority over the dried foods in palatability. The more recent extension



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of the industry has been due largely to a better knowledge of the wholesome character of canned products and the economy in their use.

Thomas Duckwall, of Cleveland, Ohio, father of Prof. Edward Wiley Duckwall, author of "Canning and Preserving of Food Products with Bacteriological Technique," in 1860 was the pioneer canner of the Middle States, canning corn, tomatoes and fruits in tin containers. The cans were made by hand, and not many hundred were made a day.

From that time the industry grew rapidly. In 1849, when the gold fever broke out, canned food came in great demand on account of its adaptness for transportation, convenient form and easy preparation. The next few years witnessed a very rapid increase and the trade showed a healthy development; the range of the pack began to widen and to include fruits, vegetables, oysters and meats; the standard of quality also improved. Maryland soon came to the front as the recognized leader and center of this growing industry, with Maine, New York and New Jersey following.

As is frequently the case when new ideas and inventions are introduced, their success is not always a certainty, but more often a problem and speculation. Very little attention is given to the historical end of their birth, and not until years thereafter is any attention given to this end of the enterprise. It was so with the perfecting of hermetically sealing food products. It was so with the old-fashioned containers. It was so with the new system, and it was so with the machinery for producing the various parts essential for the manufacturing of the complete can. Naturally all things have a beginning, and the sanitary can in this country had its beginning with the Max Ams Preserving Co., of 372 Greenwich St., New York City.

Mr. Ams engaged in the canning and packing business in 1868 and soon established a very large export business of American food products. He was an enterprising preserver of food products, and experienced all the difficulties that the old-fashioned canner experiences today. Mr. Ams was a very progressive man and continually experimenting with not only containers, but also with water-proof and oil-proof compounds for lining the outer rim of the cover in order to obtain a perfectly air-tight can.





CHARLES M. AMS

PRESIDENT

Max Ams Machine Co., Mount Vernon, N.Y.







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In 1888 his oldest son, Charles M. Ams, was taken into the firm which assumed the firm name of The Max Ams Company. Charles M. Ams, being a graduate chemist, took up the problems of the hermetically sealing of food products. At this time the can tops were either soldered on by hand or a paper ring or rubber ring was used on the flange to make the can air-tight if possible by double seaming. A double seamer of the hand type was in use in those days for seaming the bottoms on tin pails, canisters and sheet metal boxes, but that is not the style of seamer used today in the canning industry. There were almost as many leaky cans as there were perfect ones and the loss through these was enormous, and to overcome this great loss was the reason for experimenting and perfecting of the sanitary can. Europe was experiencing the same difficulties and the cans on that continent were crude affairs.

Charles M. Ams introduced the liquid compound for lining the outer rim of the cover, and he applied the compound by hand with a camel-hair brush, afterward securing a patent on this compound.

It was after the introduction of this method that it became necessary to make a machine for lining the covers with this compound, and here Mr. Julius Brenzinger enters the field with a lining machine (which is illustrated in this work), and on November 1, 1897 he filed his first patent for a lining machine, for applying the compound to the rim of the can covers. Mr. Brenzinger, prior to taking out this patent, was the mechanical genius of the company, and after these machines proved their efficiency he broadened into the field of automatic machinery and in rapid succession secured patents for many machines used in the manufacturing of tin containers and double seamers. The first double seamer was known as the No. 12 and is illustrated with its successor, the No. 2 which has been continuously improved by Mr. Brenzinger, and has become a standard automatic double seamer. There are today several thousands of these automatic No. 2's in use in the canning industry and they do the work just as perfectly and satisfactorily as they did in the days that they first revolutionized the double seamer problem. To Mr. Brenzinger must be given the credit and honor of producing the double seamers for the canning industry that have raised this branch of the business to its high plane of efficiency and productive quantity.



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The Max Ams Machine Co. branched out into a separate institution in 1896 and moved into the top loft of 399 Washington Street, between Laight and Hubert Streets. It remained there two years and then moved into Downing Street, corner of Bedford, where they remained until 1904, when they moved into their present large and commodious factory in Mt. Vernon, N.Y. An early blue print picture of the working force taken fifteen years ago in Washington Street is shown in this volume. Mr. Julius Brenzinger with four men and two boys constituted the staff. Of the original half-dozen, two are still with the company, Mr. Brenzinger being vice-president and superintendent at the present time.

Mr. Charles M. Ams, president of The Max Ams Machine Co., succeeded his father, Max Ams, who died September 4, 1908.

Mr. Emil Ams, another son, is secretary of the company, also manager of the Export Department. He has had extensive experience in the manufacturing of tin containers and is an expert in this branch of the business.

One word about cans before passing on. The sanitary can was known in those days as the Max Ams can. Charles M. Ams christened it the "Sanitary Can," as it is known today and manufactured by the Sanitary Can Company, and the American Can Company. He also first introduced the lacquered can by painting with a brush the inside of the cans used for canning lobsters, owing to the fact that lobsters contain a large percentage of sulphur which acts upon the tin.

There are two systems for hermetically sealing tin cans: One used in European countries, and also in this country, seals the can by crimping the top onto the flanged body, the sealing being made secure by a patented cement resembling rubber above referred to. This is the Ams method, and is known throughout the wide world as the Sanitary Solderless Sealed Can, patented by the late Max Ams. This can has been on the market for the past twelve years. This method has the advantage over the ordinary method of soldering, as vegetables and fruits may be filled into the cans whole. There is positively no danger of acid or solder getting inside of the can, no danger from lead poisoning, no scorching sugar or fruit, and no black spots in the syrup of the Sanitary Can.





JULIUS BRENZINGER  
VICE-PRESIDENT AND SUPERINTENDENT  
Max Ams Machine Co., Mount Vernon, N.Y.







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The Sanitary Can is now universally used in European countries, and the largest packers in the United States use it exclusively. The Sanitary Can has been the means of introducing more than 350 products that are now put up in hermetically sealed packages, and in every instance Ams Double Seamers may be used in the sealing operation.

There is no limit to the possibilities of canned foods if rightly packed and rightly placed before the people. From time to time State chemists have made careful analyses of samples of every kind of canned foods on the American market, and nowhere and at no time have they found traces of poison. Traces of tin have been found, but tin is not poisonous. Every kitchen in the land uses tin vessels of some sort every day in the year. However, the safest container is unquestionably the Sanitary Solderless Sealed Can of the Max Ams patent, which is amply illustrated in this volume.

While we speak of the Sanitary Can, we do not charge that goods properly sealed in the old-fashioned receptacle are unsafe. Indeed, we are prepared to support the claim of the canners that there is not a single authentic case where they caused injury to health. We recognize, on the contrary, that there is every reason for holding canned foods to be, as that jealous guardian of the public health, Dr. Wiley, has declared, "perfectly sound and safe, and the best of foods." The canner, from a selfish consideration, exercises the greatest possible care in the selection of the material; his brand has a distinct property value, and he can be depended upon, therefore, not to use tainted fish, flesh or fowl, or over-ripe fruit—they will not keep. Besides, the material used has to pass the United States Government inspection. Then, too, there is always sufficient heat applied in canning to effect sterilization. And should there be anything wrong, the distended condition of the top and bottom of the can would instantly declare it.

If the public only could be brought to understand that the canning factory furnishes it with the freshest, as well as the choicest selection of foods, while the unpacked too often reach it in some stage of staleness, it would be greatly to its advantage. Sickness has occasionally resulted from eating foods that have been allowed to remain in the can too long after opening, and so exposed to contamination, but few people nowadays make that mistake.



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The idea that the metal unhealthily affects the contents is exploded, although it does cause the red fruits and other vivid hued products to lose color. It was to prevent this, which so mars the appearance of the goods, that the enameled can was introduced.

During the year 1912 three billion cans of food products were put up. There are 4,000 canneries employing 70,000 people. The canners paid the farmers and growers \$200,000,000 for their products, and \$29,000,000 were paid in wages. And still sanitary canning is in its infancy.

In manufacturing machines for the producing of square, round, oval and irregular shaped tin cans sealed without solder, flux or heat, for all kinds of food products, and also machinery and tools for the making of tin and sheet metal ware in general, the Max Ams Machine Company, of Mount Vernon, N.Y., has attained a success that merits more than a few words of commendation.

The efficiency and reliability of the above-mentioned machines has attained for them a world-wide reputation and patronage, until now they are sold and used extensively in all countries. We refer to this fact with a pardonable degree of patriotic pride, as it is an instance where American mechanical ingenuity and skill, as also business tact and enterprise, has demonstrated conclusively that America is the home of progress and skilled industry.

A detailed description of the above-mentioned machines, tools and outfits is given with illustrations throughout this book, and we can assure all interested readers that they are superior in design, make and finish to numerous other machines in the market.

The Max Ams Machine Company, as a matter of course, finds a steadily increasing demand for its time, labor and money-saving products, and all interested readers who are in the market for machines for making sanitary cans for food products of all kinds, may address direct the above-named company for detailed information regarding its high-grade products of efficiency and reliability.

The Ams Automatic Improved Double Seamers have revolutionized can-making by their wonderful qualities of double seaming. The can body is nowadays finished in a fraction of



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a second, complete with cover on, ready for processing food products.

By the Ams method an entirely new principle has been evolved in can-making, and these cans are now constructed on the only safe sanitary principle in the world; that is, making a can for preserving food that is absolutely without heat, solder or acid.

Not only does every canner in Christendom see the many advantages of this method over the old unsanitary, unclean can, but the people who buy the canned food products are looking to see that the can is a sanitary one in every respect, and not only sanitary, but double seamed by an Ams Improved Adjustable Double Seamer. That means a whole lot to a housewife, and also to the canning industries.

Several thousand canners use Sanitary Cans and can machinery, and today millions of cans are made by Ams Machinery and accepted by consumer as the only safe and proper sanitary can to use in the preserving industries, including package cans for tea, coffee, spices, tobacco, oil cans or tin boxes, molasses, honey, maple syrup, condensed milk, drugs, wet or dry paints.

New machines are being produced every week, and the wide-awake canner and processor must keep in touch with Max Ams Machine Company and obtain their latest illustrations as soon as issued.

Labor-saving machinery is profit-making machinery, and in order for all canners to be on an equal competing basis, it is absolutely necessary to use Ams Can Making Machinery.

The Max Ams Machine Company in a short period of three years has been compelled three times to enlarge its extensive plant at Mount Vernon, New York City, on account of the increasing demand for its machinery for making Sanitary Solderless Sealed Cans, and other metal-working machines.

The present plant is located in a four-acre plot of ground, which affords plenty of light and air. The employees number more than two hundred, and during the busy season this is greatly augmented.

The several styles of machines illustrated in this volume show in a measure the scope of this industry. New inventions are created and perfected every week, so there is always the keenest interest manifested from the drafting room to the finished



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product in the machine room. Everything that inventive genius can suggest in improving the models is done, and thus the canner ultimately receives the benefit. In no manufacturing industry in this country is there so much money spent in experimental work as there is in a machine shop.

The Max Ams Machine Co. is prepared to furnish complete outfits of can-making machinery for all purposes, whether food products, powders, spices, coffee, paints, oils, or for whatever purpose containers are used, be they of paper, zinc, tin or sheet metal. Stamping machines, body formers, flangers, gang slitters, cappers, shears, lining machines, etc., etc., double seamers for round, square, irregular shape, or sardine boxes, in fact, sheet metal working machinery for all these industries.

One of the great and important factors in the canning industry, and we may add the sheet metal working industry, which makes successful results, is the selection of the proper machinery to install; yet experience and observation will show that there is a wide difference of opinion between men on this very vital subject, and an insufficient exercise of judgment in governing the limitations of the plant, or the capacity of the machinery for certain purposes.

The expense of installing a can-making plant is insignificant to the returns to be derived and one or two good plants in each of the many colonies would pay handsomely.

The machines illustrated in this volume represent the best types that our extensive experience has evolved in the field of machinery for making "Sanitary Cans" for all kinds of food products.

In placing these details in the hands of the canners of the world, we do so with the earnest request that our methods be thoroughly considered, and the many advantages, both sanitary and otherwise, be carefully compared with existing imperfect systems.

Our business relations with the largest canners in the trade enable us to thoroughly test every one of these machines during the period of development, and we are therefore in a position to deliver them perfectly finished.

Only experienced and skilled workmen are employed in building them, and this enables us to fully guarantee our productions.





EMIL AMS

SECRETARY

Max Ams Machine Co., Mount Vernon, N.Y.









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We are likewise prepared to furnish machinery and tools adapted for the economical production of tin or sheet metalware in general, such as petroleum, paint or varnish cans, tin pails and canisters, as well as spice and tobacco boxes, in fact, packages of every description.

The Max Ams Machine Company has erected a factory in Turin, Italy, to handle its European trade. This building cost \$50,000. It opened with a force of fifty hands.

The additional plant is necessitated by the growth of the Company's business abroad. At the present time, all the machinery exported (and the product of the local manufactory goes to all parts of the world) is turned out at the Mount Vernon factory. The new plant not only bettered conditions here, but made it much easier to handle the European trade. Previously, this had been looked after through selling agencies in the various countries ordering direct from Mount Vernon.

The Max Ams Machine Company has had a remarkable growth. It is the largest concern of its kind in the United States, and one of the largest in the world. Its machinery goes wherever tin cans are made; its history has been one of progress, and this fact is considered due largely to the manner in which it has been able to distance competitors in perfecting its machinery, everything that inventive genius can suggest in improving the models being done.

They also manufacture a wide variety of sheet metal working machinery including all styles of inclinable power presses, which are claimed to be superior to any yet devised for maximum quantity of work at minimum cost.

Mr. Charles M. Ams, who is the head of the concern, succeeding his father, Max Ams, credits not a little of the success of the concern to the policy of its operation. The merit system is in vogue, so that the best of feeling prevails at all times between employer and employee and every laborer gets his share of the prosperity of the company. In fact, Mr. Ams said, "There is no employer and employee here. We are all employees."

The Max Ams Machine Company is seeking reliable, energetic and live agents in every part of the world. There is in their machinery an exceptionally bright future for the right parties.



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### EXPORTERS AND FOREIGN AGENCIES

We desire especially to call the attention of exporters and foreign agencies to our machines and sanitary cans, and to interest them in extending our system and principles to every country where canning of any kind is engaged in. We will guarantee that Ams machinery and Ams methods will do it.

We know the success our system maintains where it is in operation, and see no reason why it cannot be duplicated everywhere, with the assistance of those who will become interested in our proposition.

The simplicity of our machines and system is such that a boy or girl can operate them in very short order. There is nothing complicated in the construction of our machines, and should any part get out of order, or even break, it can be adjusted by a local machinist. Where this is not possible, we always have on hand duplicate parts, which can be shipped immediately.

No effort will be spared to place our Sanitary Solderless Sealed Cans and Can Making Machinery in every section of the globe.

All machines are delivered on board of cars at our works, or on board of vessels in thoroughly good order.

We effect insurance on machines at actual cost, if so instructed.

Great care is taken in crating machinery, as our illustration shows, and in all cases the expense is made as small as consistency and safety will permit.

### THE NEW METHOD FOR MAKING AND SEALING TIN CANS WITHOUT HEAT, SOLDER OR ACIDS

This system embodies an entirely new principle in canned food products, and successfully disposes of the present manner of drenching the interior and soiling the exterior of cans with objectionable solder and acids.

Heat is not required to fasten the tops and bottoms, and the old fashion holes for filling are unnecessary.

The cans are constructed on sound, sanitary principles eliminating all the objectionable features now prevailing in other methods.



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The method consists in applying to the flanges of the covers, by means of a "Lining Machine," an odorless and tasteless pure compound and asbestos in such a manner as to make an absolutely air-tight seam without the use of solder or acids; making the cans cheaper, more attractive in appearance and more durable than any on the market used in processing food products.

In offering this method to the canning trade attention is called to the following advantages:

1. A neat, perfect seam.
2. A big saving in solder and labor.
3. Skilled workmen unnecessary. A girl or boy properly instructed may make and seam cans perfectly.
4. Cans for future use may be made ahead for years, and will remain in good condition.
5. Cans will not corrode when finished, no acids being used in the process.
6. Tin of any weight may be used for such cans, from Taggers to IX.
7. Any size can from 2 to 12 inches in diameter of the round or diagonally of the square may be made.
8. There will be no leaks if the bodies are properly made.
9. Any solid article as large as the interior of the can may be packed as readily as liquid.
10. The entire interior of the can ready for filling is exposed like a tumbler—and it may be filled more quickly with either solids or fluids than the old style cans.
11. Its contents may be packed more solid, and owing to the absence of the old style holes will not lacerate delicate fruits, of which detached pieces frequently cloud the syrup. Also the absence of heat in closing prevents the objectionable black spots so frequently found in syrup goods.
12. The solid contents of the can may be packed tighter, it will hold more, and therefore requires less liquor to fill up, a desirable feature when goods are to be shipped a great distance. For the same reason a considerable item of tin may be saved.
13. As the ends of the cans are double seamed, the edges will protect the labels and decorations from rubbing in the cases while in transit.

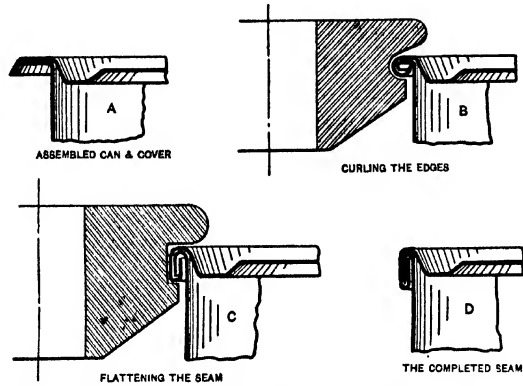


## THE MAX AMS MACHINE CO.

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14. As no solder or acids for covers are used, such cans are the most perfect sanitary vessels for food products, and will comply with all the food laws of the world.

The bodies are made in the same way as for the old style cans, the covers are stamped in the same manner, dies only being needed; while the quantity of tin required is about the same.



The Sequence of Operations followed on the Double-seaming Machine.

Some of the purposes for which the New Seam Sanitary Can is available:

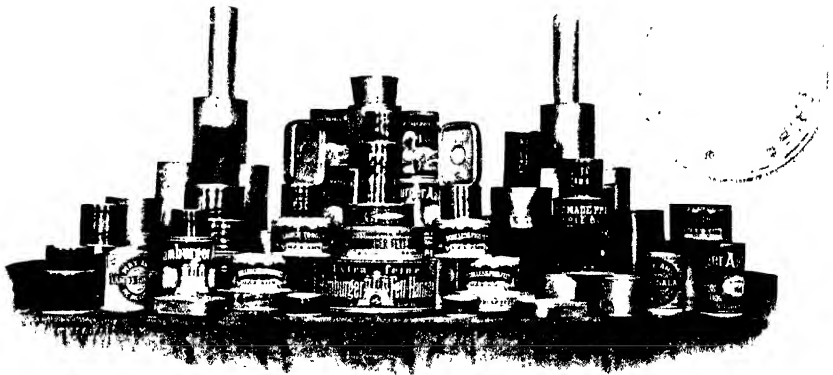
All kinds of fruit, both in syrup or water. All kinds of vegetables, all kinds of meat, smoked or otherwise. All kinds of fish and fish products, dried in oil, vinegar or brine. Heavy syrups or molasses, honey, maple syrup, condensed milk, butter, etc. Also all purposes where processing is not essential and a hermetically tight can is required, such as drugs, salves, teas, coffees, spices, paints, dry or wet, pastes, etc.



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The original force of the Max Ams Machine Co. This illustration was made from an old blue-print taken seventeen years ago.



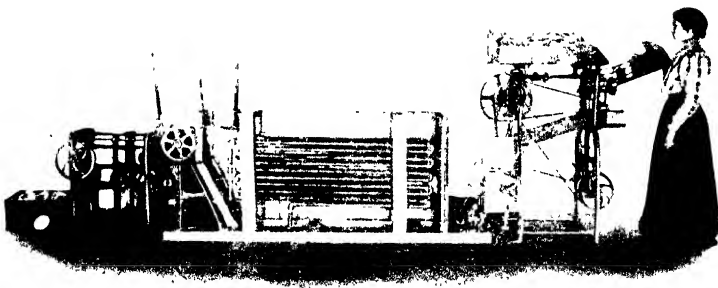
Early Packing in Sanitary Cans by Max Ams.  
From an old print taken seventeen years ago.



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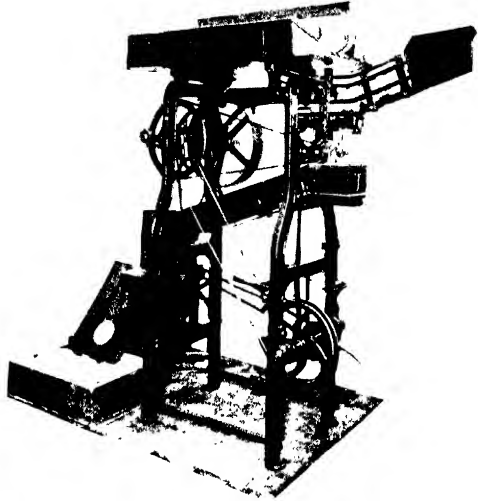
First Hand Feed Lining Machine Photo taken seventeen years ago.



First No. 1 Automatic Lining Machine for round covers, comprising liner, dryer and burnisher. Daily capacity, from 15,000 to 20,000.  
This photo was taken seventeen years ago.



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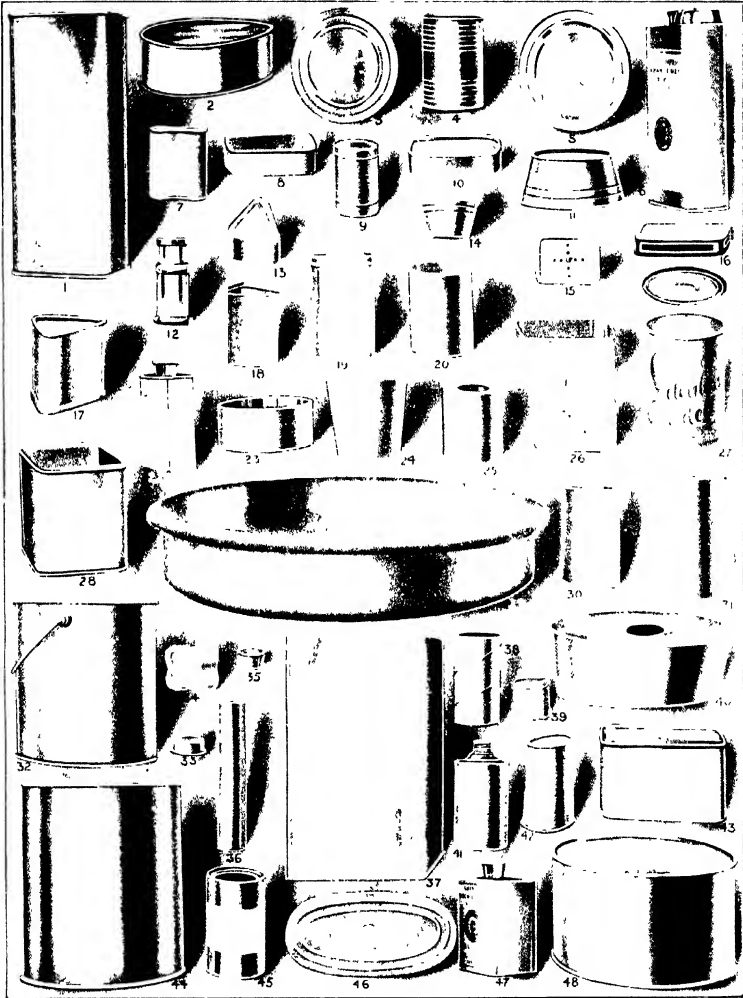
One of the original Lining Machines for round covers. Photo taken seventeen years ago.



The old way of soldering the side seam of the can.



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Cans manufactured by machinery from the Max Ams Machine Co.,  
Mount Vernon, N.Y.

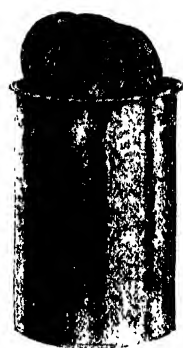


**THE CANNING OF  
VEGETABLES AND FRUITS**

**BY**

**DR. A. W. BITTING**







# THE CANNING OF VEGETABLES, FRUITS, ETC.

A description of the methods followed in commercial canning, written by  
Dr. A. W. Bitting, formerly Food Technologist, United States Bureau  
of Chemistry and now Chief Bacteriologist National Canners'  
Association Research Laboratories.

Canning is the art of preserving a food product in a hermetically sealed container, the preservation being accomplished through sterilization by means of heat. In its highest sense the object is to retain the food in as nearly a fresh condition as possible as to appearance, palatability and nutritive quality or in the condition in which it is usually consumed.

Appert (one of the earliest pioneers in canning, who experimented in methods of preserving foods over a hundred years ago) did not know what was in the air to cause spoilage, but did recognize that it was the external and not the internal air. At this time, some foods and wines were being preserved by excluding the air, the method being to cover the surface of the food or wine with hot oil. The experimenters, following Appert, laid special stress on excluding air, and when tin cans were first used, care was taken to heat the contents well before sealing; later, the cans were heated, then vented, and again heated. Sometimes a second venting was given. The belief was general that every trace of air must be removed. This theory was held until recently, particularly for meat and fish products, corn and others difficult to process, as there was no recognition of the more resistive varieties of bacteria found on some substances. The theory of exclusion of air has had followers in the practical operations up to the present time.

The next theory advanced was that it was the vacuum which protected the food substances. This was believed by the workmen almost from the beginning, as they found that heating and then sealing the can resulted in more or less of a vacuum. The vacuum aids in preserving where the organisms causing spoilage require oxygen for growth.

In factory practice more or less of a vacuum is secured by passing the cans through an exhaust box which will heat them to 180 degrees or more, or by adding hot brine or syrup before



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the can is sealed. To some products, particularly meat and fish, heat is applied, and the can vented to drive out the air; essentially the same result is accomplished in home canning in that the cans are not tightened until the contents are thoroughly heated. A recent procedure is to cap the cans and seal the vent in a strong vacuum chamber, instead of heating and later venting. The tin can with a good vacuum always shows the ends drawn in when cooled. Cans packed and sealed cold will have the ends flush or upon becoming warm, they may spring out, producing so-called "flippers" or "springers," and, while not spoiled, they have the appearance of swells and may not be merchantable. While the role of the vacuum as an aid in preserving is not to be underestimated, it has not the importance in canning that was attributed to it.

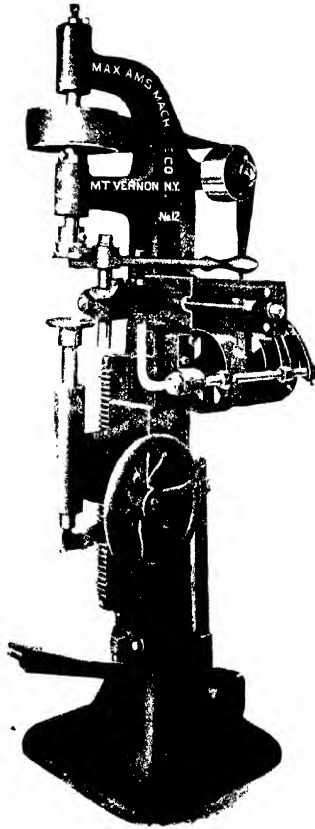
### STERILIZATION

The present status of our knowledge of canning is based on the modern science of bacteriology. The invention of the compound microscope and its many improvements has revealed the presence of minute vegetable organisms in the air, in water, and on everything with which we come in contact. These organisms are bacteria, yeasts, and molds, and are present either in their vegetable or spore state, being the "eggs" which Spallanzani thought were in the air.

**MODERN METHODS.**—Sterilization may be accomplished by heat below, at, or above, the boiling temperature, depending upon the length of time the heat is applied and the number of applications made. It is not practicable to sterilize all foods in the same way, because of injury to quality or prohibitive expense. Sterilizing below the boiling point is feasible only for a few products, principally fruits, and then is advisable only when it is desired to preserve a very fine appearance. This may be accomplished above 180 degrees Fahrenheit by maintaining the temperature for a longer time than when boiling, or by repeating the operation on two or more successive days. The object is to prevent breaking the tissue and loss of juices from the fruits by excessive heat. This method of sterilization has been applied experimentally and in private canning with gratifying results, but it involves so much time and labor that it is not used commercially except in a limited way. Sufficient work



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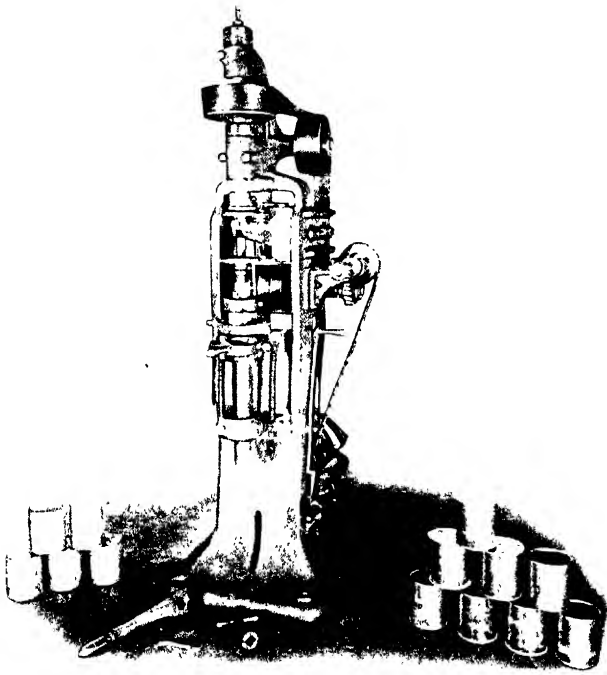
**Ams No. 12 Double Seamer**

One of the early Double Sealers.

This Seamer will seam cans 14 inches in diameter and 16 inches high.



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One of the early Double Seamers known as No. 2 Hand Feed. This photo was taken sixteen years ago.



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has not been done to say definitely what products can best be treated in this way nor what temperatures are best suited for different foods. It has been used chiefly with goods in glass, though equally satisfactory results are obtained with foods in tin.

Cooking at boiling temperature is practiced with nearly all fruits, as the germs present are easily destroyed. Most of the fruits are processed for from 12 to 25 minutes. The tomato is the most important vegetable processed at boiling temperature, which is usually maintained for 50 minutes.

Cooking at a temperature above the boiling point is necessary or advantageous for most vegetables, fish, milk and meats. It is accomplished in retorts where steam is admitted under pressure, in retorts where water can be superheated, on the open calcium chlorid or oil bath.

Among the vegetables requiring high temperature in processing are corn, peas, beans, both green and dry, pumpkin, beets and sweet potatoes. Corn is one of the difficult products to can, requiring a temperature of from 245 to 250 degrees Fahrenheit for from 75 to 80 minutes depending to a considerable extent upon how dry it is packed. If very dry, the heat will penetrate to the center of the can very slowly, the actual time required to raise the center to the temperature of the bath being from 55 to 65 minutes. In a can of peas this is accomplished in 6 or 7 minutes, the difference being due to the fact that heat currents are set up on the liquid portion of the peas, while they are absent in the corn. The necessity for a high temperature is therefore dependent upon the ease with which the heat can penetrate the product, as well as the resistance of the organisms. Some products which were formerly processed by boiling for a long time are now given a higher temperature for a few minutes, as the product has a much better appearance when it is not overcooked.

### SANITATION

A modern cannery is no longer the rough, crude shed that once was thought to be sufficient for this purpose. First of all, the location must be sanitary, away from manufacturing processes which of themselves are objectionable, such as soap making, tanning, rendering fats, etc., or any other processes which may give rise to noxious odors or be productive of



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organisms of decomposition. The yards and drives about the factory should be cleaned daily, and in summer dust should be prevented by frequent sprinkling or by the application of crude or specially prepared oil to the drives. The supply of water should be sufficient for all purposes and of good quality; that used in washing, blanching and brining should be free from excessive hardness or iron, otherwise the finished products may be damaged.

The buildings should be designed with reference to the special products to be packed, but there are some features which should be common to all. The ceilings of all rooms should be high, with ample provision for light and ventilation. One of the marked contrasts between the newer and the older construction is the provision for plenty of light. Light has a beneficial effect upon employees, contributes to cleanliness, and is an active, constant disinfectant.

That part of the factory in which prepared material is in any way exposed should be screened to keep out flies and dust. The latter precaution is often of greater importance than the former, for during the working period the moving of machinery and escaping steam will drive away insects. Water and steam pipes with hose attachment should be conveniently placed about the factory for cleaning tables, machines, floors, walls and ceilings. This is a necessary part of a modern equipment.

### METHODS AND PROCESSES

The steps in canning will vary with the product, but, in general, there are certain processes which are common to all and may be described in this outline, as receiving the product, grading, washing, preparing for the can, filling, exhausting, capping, processing and cooling.

**RAW MATERIALS.**—The first requisite in all canning is that the product be delivered in first-class condition, fresh from the fields or orchard, and in a manner to prevent injury. The condition of the material on delivery is of the greatest importance, and for that reason the factory should be located near the point of production, or if shipment be made, the distance should be short and direct. A cannery which depends upon long distance shipments or purchasing the supplies in a city market will generally be found to put out an inferior article.



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**GRADING.**—The second step, that of grading or sorting for quality, is one of great importance. The real grade of any product depends upon the quality of the original stock rather than upon the syrup or brine added or any subsequent operation, and the best time to make a separation is before the work of preparation is begun.

**WASHING.**—The next operation is generally that of washing, the method depending upon the material canned. In general, most products are placed in a tank of water to loosen adherent dust and dirt, are gently rolled over by the agitation of the water, and sprayed as they emerge. The spraying is the important step, therefore it is desirable that the water have force rather than volume. A small spray with force will cut off dirt and adherent mold very successfully.

**PREPARATION AND BLANCHING.**—Many of the fruits need no special preparation other than cleaning and sorting, after which they are placed directly in the cans. Peaches, apples, pears, etc., must be peeled and cut into pieces of the proper size. Nearly all vegetables require more or less treatment: peas are shelled, graded for size and quality, and washed and blanched by automatic machinery; corn is cut, silked, brined and cooked; beans are snapped and strung, graded for size and blanched; asparagus is cut into lengths and blanched; sweet potatoes and beets are peeled and graded, and so on. The operation of blanching is in reality par-boiling. Vegetables are dropped into boiling water for from one to five minutes, as a rule, to cause softening, and at the same time, to remove some of the mucous substances which form upon the surface.

**WASHING AND FILLING THE CANS.**—The cans should be washed just prior to being used. In the shipping and storing, more or less dirt and dust find lodgment on the inside, and washing is the only method of removing it. The work is done very effectively at the present time by machines. The filling may be done by hand or machine. There are many products, especially fruits, which cannot be successfully filled by machine because of crushing or otherwise injuring them.

**EXHAUSTING.**—After the can is filled the next step is exhausting. This is best for all articles packed cold, but is unnecessary for corn, peas, or products which enter the can hot or are covered with a hot syrup. Exhausting consists in passing



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the filled can through a steam box and heating the contents to 160 degrees Fahrenheit or above, the preference being for 180 degrees. The time required for exhausting will vary from one to three minutes.

**TESTING FOR LEAKS.**—Open-top cans are sealed by a special machine known as a double seamer. The lid is pressed into place and steel rollers crimp it on without acid or solder. This action is automatic, a single can at a time, but at the rate of 30 per minute, or 1,800 per hour.

**PROCESSING AND COOLING.**—After sealing, the cans are processed according to the nature of the contents. In processing fruits it is customary to use long vats containing boiling water and equipped with automatic conveyors, which carry the cans or crates through at such a speed as will process them for the necessary length of time. This period varies with the product. Sterilization depends on administering the proper amount of heat, and heating above the required temperature or for longer than is necessary only cooks the material to no purpose.

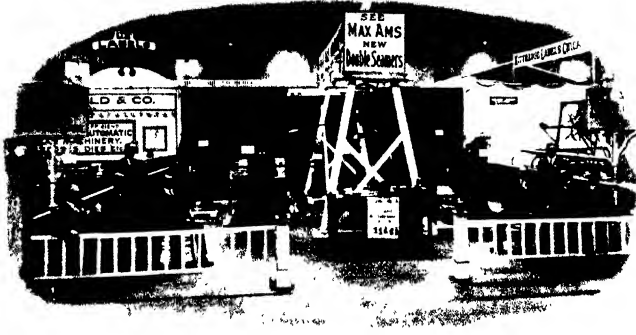
As soon as the processing is completed, the cans should be cooled with water. Unless this is done, the heat will be held so long that the contents become overcooked—fruits are softened, and tomatoes become liquid, even blacken, peas break and make muddy liquor, while corn acquires a brown color and a scorched taste.

In canning operations the product, salt, sugar, or other seasoning, and water are the only materials used. No hardener, bleach, or preservative is employed, and in commercial canning, there never was as much preservative used as is common in the household operation. Saccharin and sulphites were formerly used in corn and peas, but their use has now been practically discontinued; on the other hand, the practice of selling a “canning compound” to housewives still continues and will only cease when the nature and effects of such chemical preservatives are known, and the lack of necessity for their use is appreciated.

The tin can is pre-eminently the container used in commercial canning. The tin can has undergone a number of changes. The first cans had flush sides and ends, or plumb joints; these gave way to the stamped-over-lapped ends, and all inside soldering has been superseded by lock seams and outside soldering. Most solder caps are hemmed, so that only the amount neces-



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Max Ams Machine Co. exhibit at Louisville, Ky., February 10-15, 1913.



Max Ams Machine Co. exhibit at Turin, Italy, 1911.



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Award to the Max Ams Machine Co., Mount Vernon, N.Y.,  
at the Turin Exposition, Italy.



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sary to seal is used. The solder can has been superseded in many cases by the open top, or so-called "Sanitary" Can, and in this case, the sealing is done by double seaming on the top, no solder being used on the can except in making the side seam. The former objections to acid and solder, on the ground that they contaminated the foodstuffs, have thus been largely overcome.

The most recent improvement in the tin can is the inside coating or lacquering. This type of can is known to the trade as the "Enamel-lined" can. Various coatings have been tried at different times without entire success, and while the present lining is not perfect, it does effect a marked improvement in many lines of packing. There are fruits and vegetables which attack the tin coating with more or less vigor, resulting in a loss of color, flavor and quality, and at the same time form salts of tin which are objectionable. The inside lacquered cans are especially effective in holding such articles as raspberries, cherries, plums, beets, pumpkin, hominy, etc. They do not add to such products as corn, peas, beans, tomatoes, or those which have little action upon the tin. Inside coating is accomplished in two ways: by baking the lacquer on the sheet, and by spraying it on the inside of the finished can; further improvement in the container may be expected along these lines. The tin can is made in a great variety of sizes and shapes, but there are certain forms known as standard:

SIZES OF STANDARD CANS

Number of can	Diameter in inches	Height in inches	Capacity in ounces
1	2 $\frac{3}{8}$	4	11.6
1-tall	2 $\frac{3}{8}$	4 $\frac{1}{4}$	12.3
2	3 $\frac{3}{8}$	4 $\frac{3}{8}$	21.3
2 $\frac{1}{2}$	4	4 $\frac{3}{4}$	31.2
3	4 $\frac{3}{8}$	4 $\frac{7}{8}$	35
3-tall	4 $\frac{3}{8}$	5 $\frac{1}{2}$	39
8	6 $\frac{3}{8}$	6 $\frac{7}{8}$	104
10	6 $\frac{3}{4}$	6 $\frac{3}{4}$	107

Corn, peas, beans and such products are almost exclusively packed in No. 2 cans, tomatoes in No. 3, and California fruits in No. 2 $\frac{1}{2}$  cans.

Recently, a new style of can has been introduced for California fruits, especially for peaches, known as the luncheon size,



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which is one-half the height of the No. 2½. These are desirable because they will take in the large pieces of fruits and apparently are meeting a demand. The same style in the square can is being used for asparagus tips.

**THE LABEL.**—The label should tell the truth in terms which are direct and easily understood. It should give the name of the article, the grade, by whom packed and where packed, or the name of the distributor. Neither the names nor the illustrations used should be misleading. A picture of green peas in pods in clear relief, and subdued type stating that the contents are soaked is hardly appropriate.

A can of any food should be as full as it can reasonably be packed and processed without injuring either the quality or appearance of the product. There is such a thing as over-filling as well as under-filling, and one is as much a fault as the other. All foods packed in a liquid or semi-liquid condition, or as solids surrounded by liquid, should fill to within one-half inch of the top, and when free liquid is present it should cover the solids. Corn or peas an inch below the top would be a slack fill, even though covered with liquid. The fruits present a more perplexing problem depending upon the size of the pieces, and the degree to which they shrink in the syrup.

**THE TERM "CANNED."**—The term "Canned" as applied to food products put up in hermetically sealed packages is capable of more than one meaning. Originally, it meant any food put up in any container which might be hermetically sealed and the preservation accomplished through sterilization by heat. In commercial use, the term "Canned" applies only to food put up in tin containers and sterilized by heat. Under that construction, any food put up in glass or other containers than tin are not rated as canned foods, nor are foods put up in tin in which preservation is accomplished by some means other than heat. Fish cured in brine, pickled, or spiced, but packed in tin, is not canned within this meaning of the term. Fruits preserved with sugar, placed in glass or tin jars, and sealed in vacuum are not canned in the commercial sense. The same is true of smoked meats, such as a dried beef, and fish, as smoked herring. In domestic canning glass jars are generally used, and the product is referred to in the home as canned. It is unfortunate that the term should have so many meanings.



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**SPOILAGE.**—Spoilage may result from insufficient processing, defective containers, or the use of unfit material. These losses are generally classed under the heads of swells, flat sours and leaks. Formerly, losses were very heavy at many factories, but these are becoming less each year, due to a better knowledge of what is necessary in material, handling and improved appliances. More attention is paid to testing for bacteria, and greater care is taken in obtaining accurate thermometers and gauges, automatic temperature-regulating devices, and time-recorders, so that little is left to the judgment of the processor or helper.

Spoilage due to insufficient processing is generally divided into two classes—swells and flat sours. In the former, there is generation of gas, causing the ends of the can to become distended; in the latter, the content of the can is sour, but there is nothing in the appearance of the can to enable the customer to determine the condition until the can is opened.

Can leaks may occur along the side, “seam leaks”; at either end, “end leaks”; at the cap, “cap leaks”; at the tip, “tip leaks”; or may be due to defective tinplate. Can-making has reached such a point of perfection that manufacturers guarantee all above two to the thousand. Leaks invariably cause swells.

There are two conditions, known to the trade as “springers” and “flippers.” A springer is a can, the end of which will bulge slightly after a time but on opening there is found neither gas nor spoilage, though the cans have the appearance of being swells. This condition has been found to be due to overfilling or to packing cold. Such goods when placed in a warm grocery will bulge due to the temperature. A flipper is a springer of such mild character that the head may be drawn in by striking the can on some hard object. It is always possible to tell a swell from a springer by the use of a microscope, as in the former there will be large numbers of organisms while in the latter there will be very few.

While a spoiled can of food should never be eaten, the danger of poisoning from fruits and most vegetables is very remote. Ptomaines or other poisons may form in meat, milk and fish, but rarely, if ever, in vegetables.

**HOME CANNING.**—It is not possible to accurately estimate the amount of home canning that is being done, but it must



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aggregate many millions of cans. In the rural districts in particular, it is considered to be a part of the season's work to put up canned foods for the winter, and from fifty to one hundred cans is no unusual stock for a family. The products canned are usually fruits and berries, as these are the most easily handled under home conditions.

The household department of numerous weekly papers gives much space to instructions in home canning, and many cook-books give recipes and details of the operation. There are also manufacturers of small home-canning equipments who give glowing accounts of the profits to be made from doing such work. Whether it is profitable to can for home consumption depends upon the cost of the raw material, fuel and labor. It may be said that it is not generally profitable to buy fruits or vegetables in a city market and put them up in cans. Lots of a bushel, half-bushel, or crate generally lack the necessary freshness, are in too small quantity to permit of grading, and there is too much waste. The labor involved is disproportionately large for the amount handled, and the expense for cans and sugar must not be omitted in determining the cost of the finished product. Home canning may be profitable when the raw stock costs little or nothing, when no account is taken of the labor, and the satisfaction of having one's own handiwork is worth more than the money value of the article.

Home commercial canning is being encouraged to a certain extent and whether it will prove profitable or not will depend upon local conditions. The outfit needed for canning most fruits and tomatoes is very small, and where a crop cannot be marketed, except at a very low price, or the labor cannot be otherwise advantageously employed, a fair profit may be obtained. The canning of special articles or putting them up in a certain way for an established trade is often successful, but on standard articles like tomatoes, corn, peas, string beans, etc., the chances of home canning in competition with a modern factory are about the same as those of a hand meal grinder as compared with a modern grist mill. The product of the average home cannery will grade in quality on about the same par as country butter. Both depend upon the producer, but as a class, neither ranks very high. The small home cannery is useful in saving good food which would otherwise go to waste, and its develop-



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ment should be encouraged, but the idea of large profits should be held in abeyance. For the novice and many others, it would be better to learn how to buy the best prepared foods rather than to attempt to pack them.

**COST OF CANNED FOODS COMPARED WITH FRESH.**—In making a comparison of the cost of canned and fresh products of the same kind, a number of factors must be taken into consideration: first, the cost of the raw material and the waste when purchased in the small quantity used in a single meal; second, the cost of labor and preparation used in making it ready for the table. It is obvious that a comparison cannot be made for time, as the canned article may be had throughout the year, and the fresh for only a limited season, and purchase of a product out of season is usually at a high cost. In making a purchase of either the fresh or canned article, the smaller the quantity, the higher the price; the single can costs more than if bought by the dozen, or case, as does the half-peck of apples compared with the bushel or barrel.

Take, for example, a No. 3 and a No. 10 can of whole apples; the former usually retails for 10 cents and the latter for 25 to 30 cents. Those who can use the latter have a decided advantage, as it will contain between four and five times as much as the former. Only in apple districts, and for short seasons, can the same quantity of fresh fruit be purchased at the same price. Wherever the fresh fruit sells at the rate of \$2 per bushel when purchased by the peck, and this is below average prevailing prices in cities, the canned article is the cheaper. In the raw stock, there is loss in peel and core, from bruises, short weight, and often rot, all of which is eliminated in the can. The canned variety usually cooks better, and for the pie or dumpling is generally the cheaper.

Neither corn nor peas can be purchased in large cities, nor in many smaller ones, as cheaply as in the can, and then they are not so fresh. In up-to-date canneries the article is put up the day it is picked, while three or four days may elapse from the time the raw product is harvested in the garden (in transportation, in the hands of the commission house, and in the grocery) before it reaches the consumer's table. It requires nearly two quarts of good peas in the pod to make one can, and often more than three quarts of the heavy-podded variety found on



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the market. At no time can the smaller peas or fine-kerneled corn be purchased as cheaply as in the can. It requires 2 bushels of good peas to yield one No. 2 can of petit pois, or 1 bushel to yield one can extra sifted, and from 4 to 8 ears of *small corn to make one can*. The pea and corn packer, however, handles tons of these crops especially grown for him, and uses the highest class of automatic labor-saving machinery in all operations, so that the real labor on a single can is very small. The consumer cannot purchase peas at from 30 to 50 cents per bushel, nor corn at \$9 to \$12 per ton, and these represent initial costs in large quantities.

### THE CANNING OF VARIOUS FRUITS

Fruits are the easiest of all articles to can, boiling for a short period being sufficient to sterilize in nearly all cases. Formerly it was the practice to pack all fruit in No. 3 cans, but within the past few years a change has taken place; eastern fruits, especially the high grade, are put up in No. 2 cans. The apple is the one exception to the rule. California fruits are packed in No. 2 and No. 2½ cans, the No. 3 can being almost wholly supplanted by the smaller size. In displacing the No. 3 can, the open top can has been substituted for the solder top, with the result that the cans may be filled with less injury to the fruit and may be sealed full. The quantity obtained in the No. 2½ open top can is in most cases equal to or more than was obtained in the solder top No. 3 can, and it is in better condition.

In the canning of fruits the general practice is to fill the can level full, or nearly so, without crushing, and then add the necessary syrup. The syrup will abstract a certain amount of juice, so that the can will not be full upon opening, and this condition will vary with the different fruits. The softer the fruit, such as strawberries, the less will be the fill, while hard fruits, such as pears, will be scarcely affected. The question of fill will depend in part upon the variety of the fruit used, the state of maturity, the density of the syrup, and the time of processing. The selection and handling of the fruit so as to get a can with all the desirable qualities distinguishes the real canner.

The weight of fruit used in a can will vary somewhat when the fill is made by volume, as the interspaces in the case of large and small fruit, or soft and hard are not the same. In order



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to secure greater uniformity, it has been proposed by one of the packers' associations to fill all fruits by weight, 21 ounces for a No. 2½ and 22 ounces for a No. 3 can, before cooking. This is a fair average fill for small or sliced fruits, but peaches in large pieces or whole pears, plums, etc., will weigh less.

*In the packing of high class fruits, syrup is used, and this may vary from a very light to a very heavy syrup, or between 10 and 60 degrees. Most fruits require the addition of sugar before they are used, and it should be added during cooking, and in canning it has a great deal to do with the development of the proper flavor. The water pack is used only upon the poor grades, or pie stock. The amount of sugar used will depend upon the acidity of the fruit and the flavor desired. It is unsafe to follow a rule-of-thumb method to get the highest class goods; and as the real flavor will not develop until the foods have been put up for some weeks, it requires an expert to determine the proper syrup.*

### APPLES

Apples used for canning should be of such varieties as cook well. They should be slightly acid, smooth and sound, and without bruised spots. Poor apples cannot be used in canning and make a first class product. The peeling is done by hand or power peelers and the core removed by the same operation or with a coring machine. Apples which are intended for dumplings are left whole and graded into size to give a certain number to the can, but those intended for pies or other cooking purposes are sliced in quarters or smaller pieces. The peeled apple is placed in cans as quickly as possible and hot water added to make the fill. If the apples cannot be packed in the can at once, they are held in tubs of cold water to prevent their oxidizing or turning brown. The process on apples is about eight minutes at 212 degrees Fahrenheit for No. 3 cans and about ten minutes for No. 10 cans.

### APRICOTS

Apricots are produced almost exclusively for canning in California. They are grown and handled the same as peaches, though not quite so carefully, and are graded for size by running over screens having openings of forty, forty-eight, fifty-



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six, sixty-four and sixty-eight thirty-seconds of an inch, respectively. The ripe apricot is not peeled, as a rule, but the skin is well wiped either by hand or machine, after which the fruit is pitted. The canning operation is the same as for the peach, though the syrup used is generally lighter.

### CHERRIES

Cherries should be brought to the factory in small boxes just as they are handled for the retail trade. They should be stemmed and then washed. The California fruit is graded for size over screens having openings of twenty-two, twenty-four, twenty-six, twenty-eight and thirty-two thirty-seconds of an inch. The cherries may or may not be pitted, but generally it is preferable that this be done. The new machines do the pitting rapidly and well. The cherry rests in a cup-shaped opening and the seed is forced out by a small cross-shaped plunger. There is naturally some lacerating of the flesh, but not more than is usual in the pitting by hand. After the cherries have been pitted they should not be permitted to accumulate in masses of more than two inches in depth. The quantity should be weighed for each can and a heavy syrup added, or they should be heated in a preserve kettle and filled in the cans hot. The latter method gives a better fill, but breaks or tears the fruit to a greater extent. The enameled can is preferable for this fruit. The process is eighteen minutes for a No. 2½ can. White cherries are usually canned without pitting and in a lighter syrup than is used upon the red.

### GRAPES

Grapes have not been used very extensively for canning purposes, but there has been a noticeable increase in the past few years. In the East the white variety is used almost exclusively, but on the west coast both the white and the colored grapes are canned. They are gathered when the flavor is fully developed, but the fruit is firm, the bunches are hand picked, washed and put in cans to within one-fourth of an inch from the top. Hot syrup is added, the cans are exhausted and then closed. The process is about fourteen minutes at 212 degrees Fahrenheit for a No. 2½ can. In California the grapes are also graded by size, being run over a screen having holes twenty, twenty-two, twenty-



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four and twenty-six thirty-seconds of an inch in diameter. The sizes thus separated are not indicated on the label and the consumer is unaware of this refinement except as it is indicated by the price.

### PEARS

Pears used in canning are grouped generally in two classes, hard and soft, the former being represented by the Kiefer and the latter by the Bartlett. While the Kiefer yields very well, the consumption is small, largely because of the poor quality. The Bartlett is much better, but often the label does not adequately tell the story.

The canning of pears is similar to that of canning apples. The work of peeling, coring and halving, however, is done by hand. Considerable care is taken in trimming to a symmetrical form and in removing the core to cut away only so much as may be necessary to remove all traces of seed cells. They are graded in three classes, dependent upon size or number of pieces required to fill a can, and uniformity of shape and texture. This is done according to the judgment of the filler and not by machine. They are put into cans the same as apples and a syrup is generally used instead of hot water, as it retains the flavor much better. The process is sixteen minutes at 212 degrees Fahrenheit for No. 2½ cans.

### PLUMS

The classes of plums are generally quoted on the market as green gage, yellow egg and Lombard. Other varieties are used, but these are the popular ones. The plums are selected when just ripening. On the Pacific Coast they are graded for size by running them over screens having openings thirty-two, forty, forty-eight and fifty-six thirty-seconds of an inch in diameter. They are washed, put in cans with syrup and processed fourteen minutes at 212 degrees Fahrenheit for a No. 2½ can.

### RASPBERRIES

Raspberries are grown and harvested the same as for the market and should be delivered to the factory in berry boxes. At the factory they are handled in exactly the same manner as strawberries. Red raspberries and black caps should be kept



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separate. Columbia berries are regarded as inferior in appearance to Cuthberts, being less bright in color, but they have excellent flavor. The use of syrup of the right density has much to do in bringing out the full flavor. The cans should be enamel lined to retain both color and flavor. The process is twelve minutes at 212 degrees Fahrenheit.

### BLACKBERRIES

Blackberries should be given the same kind of treatment as raspberries, though they are more solid and will stand being handled in larger volume. They do not require so heavy a syrup.

### STRAWBERRIES

Strawberries used for canning are grown the same as for market, and such varieties as are firm and of uniform size should be used. They should have a well-developed flavor and a little more acid than is desired for eating raw. They should be gathered in the same manner as for the market, in boxes holding not more than one quart, and preferably only one pint, the object being to deliver them in the best possible condition, without bruising or mashing.

A distinctive method of handling berries on the Pacific Coast is in a chest of shallow crates. These chests are well made and hold four tiers of five trays each. Each tray measures about 8 inches wide, 15 inches long and 1½ inches deep inside. The boxes holding the berries are therefore very shallow and there may be two or more in a tray. The fruit arrives at the factory or market with the minimum of bruising.

On arrival at the factory different methods are followed, but one of the best, as practised by one of the large packers, is as follows: The boxes are delivered to tables, where they are turned out upon enamel pie plates. The berries are stemmed, defective ones sorted out, and any foreign substance removed. The plate containing the berries from a single box is passed to another helper, who washes the fruit under a spray; the next one weighs each plate and adds the correct amount to fill one can. The berries are poured from the plate into the can, in which operation a special half funnel is sometimes used. The can should be filled a little above the level. Hot syrup is added



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and the can given a two-minute exhaust, sealed and processed for fourteen minutes at 212 degrees Fahrenheit. The cans should be preferably enamel-lined with open tops.

In the handling of the fruit at this plant the pans are washed after each separate usage. The work involved is greater than in some other systems, but the product can hardly be excelled in cleanliness and in flavor.

At some other plants the berries are stemmed from the baskets and are run through a fruit washer to remove any leaves or dirt; they are then filled directly into cans without weighing, or are collected in large pans, and when a sufficient quantity has accumulated are then put into a preserving kettle with sugar and heated until they just come to a boil. The berries and their syrup are then filled into the cans.

Strawberries do not permit of being handled by automatic machinery. The stemming must be done by hand, but in the plate system they are not touched after once being washed. In the system in which considerable dependence is placed upon the fruit washer the cleaning is well done, and in a manner not to injure or break the fruit. Cans which are well filled with cold fruit will not be full of fruit after processing. The heat causes the breaking down of the tissue and consequent loss of juice, so that the berries will float. Berries heated with sugar in the preserve kettle will give a better fill in the can, as more juice is cooked out than can be returned to fill the space between the solids. In this practice there is a distinct difference between the manufacturer who attempts to give a can with the maximum of food solids and the one who cooks the berries to abstract the juice for other use, such as fruit syrups for soft drinks. A syrup should be used in all cans, as it holds the flavor much better than water. Sugar is always used with such fruit, and the proper time for its application is when it is being cooked. The degree or density of the syrup is a matter of taste, but preferably it should be fairly heavy. The enamel-lined can is decidedly the best for preserving flavor and color, and also for resisting the action of the fruit on the can. Strawberries are also put up in glass and given the same general treatment.

The following articles are "canned," and may be had at your grocer's. Every can guaranteed to please as to quality and to keep almost any length of time.



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**VEGETABLES.**—Asparagus, lima beans, pork and beans, green string beans, white wax beans, red kidney beans, beets, carrots, corn, okra, peas, pumpkin, sweet potatoes, sauerkraut, spinach, succotash, tomatoes, mushrooms, cucumbers, pie plant, squash, hominy, olives, dandelions, cauliflower, egg plant, lentils.

**FRUITS.**—Apples, apricots, blackberries, blueberries, figs, cherries, crabapples, grapes, gooseberries, loganberries, peaches, pears, pineapples, prunes, plums, raspberries, strawberries, apple butter, apple sauce, baked apple, cranberries, elderberries.

**FISH.**—Clam chowder, clams, codfish, lobsters, oysters, mackerel, herring, salmon, sardines, tuny fish, green turtle, terrapin, shrimps, crabs, fish roe, herring roe, codfish balls, caviars.

**MEATS.**—Ham, chicken, turkey, tongue, beef, mutton, veal, sausages, tamales, meats, are prepared in all styles—potted, roasted, stewed and corned.

**SUNDRIES.**—Soups of all kinds, condensed milk, spaghetti, macaroni, plum pudding, mincemeat, and Boston brown bread, molasses, etc. It has been stated that under the present sanitary canning system 350 products may be put up.

### PACK OF 1913

Tomatoes over	14,500,000 Cases
Peas	8,200,000 Cases
Corn	7,300,000 Cases
Salmon	9,000,000 Cases
Tunny	150,000 Cases



# **NEW METHOD OF CANNING**

**BY**

**DOCTOR KOCH**







## A NEW METHOD OF CANNING

Reported by Dr. Koch of the Dahlem Experiment Station, Germany, in  
"Konserven-Zeitung."

One stage in the operation of packing vegetables into cans is the preliminary boiling or bleaching. Prior to this operation the vegetables are selected, washed, cut or otherwise treated, and just before being filled into the cans are parboiled or blanched, the actual cooking being accomplished during the sterilizing process after they have been placed in the cans or other receptacles in which they reach the consumer. The operation of blanching is carried on as a rule by packing the vegetables loosely in the "blanchers," which are perforated or sieve-like metallic vessels, which are then suspended with their contents in a vessel of boiling water. The time of blanching varies with the nature of the goods, but it is generally kept up until the desired state of softness is reached.

It is very evident that this method of parboiling gives rise to a loss of water-soluble constituents particularly if the blanching water is thrown away, as is usually done in a commercial canning factory. It is shown in the annual report of the Dahlem Station that in many cases this loss of soluble solids was considerable, the amount of loss standing in a certain relation to the time given to the blanching process.

What are the natures of these lost substances? Aside from the soluble nitrogenous compounds (amino bodies) which are of no importance from the standpoint of nutrition, as they are excreted unchanged, they are composed of soluble carbohydrates (sugar, starch, etc.) and mineral substances—precisely the constituents which are the most valuable ones in human nutrition. If we reflect that the common vegetables are poor in food value at the best, it is the more a matter of regret that this small value is reduced by the extraction which occurs during the blanching process. As milk which has been deprived of a part of its cream is said not to be entitled to be called "whole milk" so extracted vegetables would hardly be entitled to be called "whole vegetables."

Many years ago I pointed out the fact that the extraction of vegetables might be avoided by blanching them in steam instead



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of in water, particularly when the steam was applied under about 4 pounds pressure. The advantages of this method consist, first, in a shorter time of blanching, and second, in a diminished loss of substance. Although the change from one method to the other could be made without difficulty, the tendency of canners to stick to old and time-worn methods has up to the present prevented the general introduction of the new idea.

It was therefore a matter of great interest to me to learn that Mr. A. Huch, owner of a canning factory in Brunswick, had worked out a method of canning vegetables along new lines. The process is protected by the German patent No. 200132. The inventor started out from the fact that canned vegetables, by being in constant contact with the filling water, are extracted thereby, with a loss of much of their nutritive value and desirable flavor. He recognized the fact that this removal of desirable substances was a process of osmosis. When a group of vegetable cells are immersed in water, on the one hand soluble substances pass out through the cell membrane, and on the other hand water penetrates into the interior of the cell. This process continues until the liquid within the cell and that without are of the same concentration. Huch conceived the idea to reduce the amount of water to be placed in the can to a minimum, that is, just enough to provide sufficient steam for the sterilization and to keep the goods moist. By thus restricting the amount of water in the can the goods were protected from the extracting action of the water, the sterilization being effected by the steam developed within the can itself. For this purpose he provides the can with a perforated false bottom, which in a one-pound can is about two-fifths of an inch above the real bottom. Enough water is placed in the can to about fill the space between the two bottoms. The rest of the space is filled with the goods up to the top and the can is then closed in the usual manner. In order to get a sufficient quantity of goods into the can the vegetables are first blanched with steam under a slight pressure.

In processing the goods care is taken to keep the can in an upright position, i. e., with the water under the false bottom where it does not touch the goods, the same position being maintained during cooling. As the weight of the full can is specifically lighter than water, when proceeding in an open water bath the cans must be kept submerged by a weighted cover.



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A slow process is recommended for the new method, as follows:

Peas, $\frac{1}{2}$ and pound cans.....	15-15-15 min. to 117 deg. C.
Peas, two pound cans.....	15-30-15 min. to 117 deg. C.
Carrots .....	15-15-15 min. to 112 deg. C.
Beans .....	15-20-15 min. to 115 deg. C.

The cold pressure is to be released as heretofore.

On cooling care is to be taken to keep the false bottom below.

Operating in this manner steam is evolved from the water in the bottom of the can. This steam penetrates the vegetable, cooks it tender, moistens it sufficiently, and when the sterilizing is over condenses and falls to the bottom again.

A canned vegetable cooked in this way is superior to vegetables cooked in water. It retains its full aroma and is distinctly better as far as flavor and taste are concerned. Since an extraction of the vegetable is impossible, it retains all its substance and its food value is greater. In consequence sugary goods like peas and carrots retain their full sweet taste and do not require special sweetening with sugar or saccharine. In the case of peas another special advantage is to be noted—the larger grades frequently gelify and show a cloudy liquor when treated in the usual manner, and hence have caused bad feeling between producer and consumer since the beginning of the canning industry. In the Huch process no gelifying can take place, as neither starch nor other constituent escapes into the surrounding liquor, simply because there is no surrounding liquor. Under the old process there does not seem any way to entirely prevent cloudy or thick liquor.

Last year we made experiments with the Huch process in this experiment station, using the following vegetables: Peas, carrots, snap beans, wax beans and mushrooms. At the same time we made parallel experiments on the same goods by the old method, that is, with ordinary blanching. Later both sets of canned goods were given for test to various persons, who unanimously agreed as to the superior quality of the goods packed by the Huch process. Besides this quality test I submitted both goods to a comparative chemical examination determining the dry substance, crude protein, net protein, sugar, and mineral substances especially phosphoric acid and potassium salts.

In this work also it was found that the goods put up by the Huch process were in all cases richer in food value than those



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which had been subjected to the usual blanching. The chemical investigation was carried out as follows: The net contents of each can were weighed in a tared porcelain dish and dried to constant weight, by which the moisture and the dry substance were determined. The dry substance was then finely ground (care being taken to prevent loss by dusting), again dried, and then used for further analytical investigation. In the following table the columns headed "with" and "without" refer respectively to goods packed in false-bottom cans by the Huch process and goods blanched and packed by the ordinary method. The figures given are percentages of the constituents named.

TABLE I.

	Water		Dry substance	
	with	without	with	without
Carrots . . . . .	91.86	93.80	8.14	6.20
Peas . . . . .	71.47	85.97	28.53	24.03
Snap beans . . . . .	92.30	94.59	7.70	5.41
Mushrooms . . . . .	92.69	94.38	7.31	5.62

TABLE II.

	Peas		Wax Beans		Snap Beans		Mushrooms	
	with	with-	with	with-	with	with-	with	with-
	out	out	out	out	out	out	out	out
Crude protein.....	3.67	3.33	1.50	0.90	1.45	1.10	1.60	1.17
Net protein . . . . .	2.60	1.01	0.71	1.13	0.88	0.84	0.83	
Sugar . . . . .	2.97	1.24	0.78	0.75	0.56	0.28	0.47	0.29
Mineral subst. . . . .	1.48	0.65	0.56	0.46	0.52	0.45	0.66	0.54
K O (potash) . . . . .	0.74	0.27	0.24	0.11	0.14	0.14	0.08	0.08
P O (pho. acid) . . . . .	0.61	0.30	0.11	0.09	0.25	0.08	0.13	0.09

The goods packed in the cans with the perforated false bottoms were therefore not merely better from the standpoint of taste and flavor, but they were richer in food substance. This is a fact which should be self-evident on reflection, that goods packed by the ordinary method are subjected to two sources of loss. In the first place they are extracted during the blanching process, and in the second place it is a too common practice for cooks on opening a can to pour off wholly or partly the water in which the goods have been packed. In the Huch process there is so little broth that no soupiness or mushiness of the goods need result.



CRAWFORD, SECRETARY OF THE SALMON  
PACKERS' ASSOCIATION, ON SALMON

"We have on Puget Sound, the Spring salmon, which in the Columbia River is known as the Chinook; in California as the Sacramento; on the Oregon and Washington coast as the Quin-nat or Tyce. He is the largest salmon, often weighing over seventy pounds. In many Spring salmon the flesh is all white, while in others it is all red, and in some both white and red.

"The Spring salmon stay out in the ocean until they are at least four years of age or matured, when they seek the fresh water for spawning. They enter only the large rivers, which they persistently ascend, climbing over huge boulders and riffles until they reach the head water of the stream; there they will spawn and then die.

"We have what is known on the Columbia River as the Blue-back, and on Puget Sound and the Fraser River as Sockeye, while in Alaska as the Alaska Red, averaging from six to eight pounds. This salmon also returns every four years for spawn-ing, but it enters only rivers whose source or head waters is in snow-fed lakes or streams.

"Then we have the smallest of the salmon, the Humpback. The Humpback returns every two years for spawning, entering only the small streams or lagoons, often spawning close to the ocean. The Coho Silverside come into the fresh water streams in large numbers and seek the larger rivers, but are not so per-sistent as the Spring salmon in reaching the head waters for spawning.

"We have what is known as the Chum, which will average about ten or twelve pounds each and which run in the shallow streams for spawning.

"In all these species of salmon it is noticeable how distorted the jaws have become, and how the old breeding fish has deteriorated before spawning time.

It is a fact that shortly after the fish come in from the ocean, their stomachs gradually collapse and they lose their desire for food; it is the general opinion that they have reserve strength which is used in taking them to the spawning grounds, for many



times the old Chinook salmon has been found to be more dead than alive even when they spawn.

"In spawning, the male salmon, and sometimes the female, will with their head and tail excavate or hollow out an elongated place in the sand or gravel; the female fish will deposit therein her eggs or spawn, which the male fish will cover with its milt or spermatc fluid (resembling milk in appearance). This spermatc or life-giving fluid impregnates and fertilizes the spawn or eggs, which readily absorb it. The cool running water passing over the eggs as they lie in the gravel or sand, in fifty or sixty days will hatch them out.

### PROCESS OF SALMON CANNING

"The Salmon, after being thoroughly cleansed, washed and scrubbed, passes through gang knives, which cut it into proper sized pieces for the can; it is then fed into the filling machines which automatically fill the cans, or the fish is taken by the hand fillers, who with gloved hands carefully fill each can.

"The empty cans are fed to the fillers by conveyors which carry the cans in a continuous line from the salt table. The contents of each can is one pound of fresh salmon and one-quarter ounce of refined salt (in half-pound cans, eight ounces of salmon and a proportionate quantity of salt), no other ingredients whatever being used.

"After being filled, the cans are inspected, or passed through an automatic weighing machine, then run through the can washing machines. The cans are then placed in cooler trays, after which they are submerged in hot water to test for leaks; any cans showing air bubbles are immediately removed and re-soldered while still hot. The cooler tray of cans is then placed in a retort and steam cooked for from forty to sixty minutes under a steam pressure of ten to twelve pounds, with a temperature of about 250 degrees Fahrenheit.

"Under what is known as the solderless, or sanitary can, which is fast taking the place of the old style cans, no soldered vent-hole appears on the top of such cans. The salmon is given a second cooking in the retorts at a temperature of from 240 to 260 degrees Fahrenheit, which softens the bones and completes the sterilization of the fish so that as a food



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product it is absolutely pure and hygienic, more than meeting the stringent requirements of pure food laws and inspection of State and Federal officials.

"Salmon canning is peculiar unto itself, the canneries being out on, or adjacent to salt water; the nuisance of flies is not a factor, disposition of offal and waste is economical and of small import.

"Absolute cleanliness and sanitary conditions prevail, which in connection with the real food value puts salmon in the lead and makes living cheaper."

J. K. ARMSBY

ON THE

### SULPHURING OF DRIED FRUITS

A New York paper of large circulation is conducting what it presumptuously terms a pure food department. It has recently let itself loose on dried fruits and, among other absurd assertions, it says: "No dried apricot purchasable in New York City under any brand or in any store, regardless of name and reputation, is free from the effects of the sulphur dioxide treatment which it receives. The dried apricot is a delusion and a fraud. The sooner people refuse to eat fruit doped as the dried apricot, dried peach, dried pear and dried apple are doped, the sooner will the doping cease."

Mr. J. K. Armsby, president of the J. K. Armsby Company, said:

"The paper which published such articles is, like all other purveyors of sensations, very meagerly informed on the subject. Such papers do more harm than good. They are a public liability and not an asset. Their conduct is explained, for the greater part, by their ignorance.

"The use of sulphur in connection with dried fruits has nothing to do with coloring. Sulphur is used to kill the microbes in the fruit. It is not in any way deleterious to the consumer. Before the fruit reaches the consumer the sulphur is eliminated from it. Not a trace of the sulphur is consumed.

"The government permits the use of sulphur in the curing of fruits. The only objection that the government has pertains to the amount of sulphur that is used.



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"If the use of sulphur should be prohibited the dried fruit industry of California would come to an end."

It would appear, then, that the article in the New York paper on the dried fruit subject is on the same line as the attacks which were made some months ago by a frantic journal on the canned foods industry. Such papers do more to poison the public than all the careless canners and packers in the country. By creating false fears in the minds of the consumers they are responsible for canned foods and dried fruits remaining on the shelves of dealers until they deteriorate. The journals poison the minds of the people first by faulty, if not false, statements.

If the editors were conscientious in carrying on their pure food campaigns and were not too intent on chasing the main chances of advertising, they would encourage the sales of canned and dried foods. When the demand for these foods sets the pace for the supply the stock on the dealers' hands will always be fresh and the danger to consumers will be eradicated. But the editors who cultivate the advertising field at the expense of the intrinsic value of their papers are not conscientious. Instead of employing experienced and scrupulous investigators, they make use of unsophisticated writers who lend themselves to any questionable game to work up sensations and impose on the gullible readers. It is for this reason that the news departments of the great dailies are regarded as kindergartens. The supply of raw journalistic material is so great that the editors demand only the cheapest sensation-mongers to cater to the public. Material supplied to the public by the canners and dried fruit packers is always much more carefully prepared than that supplied by the sensational papers. Therein lies the safety of the consumers.

### CANNED FOODS A LA ANTIQUE

September 17, 1913

An interesting experiment was made by a merchant in New York City, who invited several gentlemen to his place of business, for the purpose of passing on his contention "That lapse of years has no deteriorating effect on the contents of cans." When the feast was finished, a majority of the jury preferred the food that had been longest canned.



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The menu on this extraordinary occasion consisted of a can of beef stew put up twenty years ago, Mulligatawny soup, boned chicken, tongue, roast chicken, braised beef, all ancient and gathered together from all the old warehouses in the city.

The test was made so that none of those at the table should know the age of the thing he had tasted until after it had passed his lips.

Pea soup was first passed, two small portions to each—one canned 1889, the other of the present year, but voting blindly on slips of paper, five preferred the vintage of 1889, and four the present year.

Beef stew, fourteen years old, came next, and was pronounced excellent; braised beef, eight years old, followed; then roast chicken, four years old, proclaimed "A No. 1"; boned chicken, shrimp, seven years old, corn beef, twelve years old, followed; pigs' feet, twelve years old, came next with other good things, including wine.

The host stated that he wanted to demonstrate that if canned foods are properly put up in the first instance, the simple lapse of time has no deteriorating effect on the contents. He added that he would be personally responsible for any after-effect that might develop. There has been none up to this writing.

## WHAT IS PTOMAINE POISON?

The fear of ptomaine poisoning from canned food is deprecated in a paper to the Canadian section of the Society of Chemical Industry by R. T. Mohan, who urges that physicians and others should carefully avoid creating alarm. Cannery laboratories in Germany, the United States and Canada investigate all reports of poisoning from canned food, and in practically every case find the charge unfounded. A ptomaine is a putrefactive alkaloid, a product of decomposition. There are many kinds, but few really poisonous, the poisonous ptomaines being formed by disease organisms, some yeasts and molds and a few other putrefactive organisms. As no packer would think of packing putrefactive products, the only possibility of ptomaines arising is where a can has leaked or swelled.



# WEIGHT OF FILLED CASES

	Case Cn'ts Dozs.	Lbs.	KILOS			Export Shipping Measurements	Cubic Measure
			Gross	Legal	Net		
No. 8							
Fruits—Veg. and Tom.	1	98	45	39	34	One doz. to case	2' 7"
" 6 tins to case.	1/2	52					
Honey	1	160				14 1/2x13 3/8x20 3/4	1' 4"
Tomato Puree.	1	95					
Catsup—Screw top.	1	100	46	40	36	Half doz. to case	1' 4"
" Plain top.	1	96					
Pineapple in Syrup.	1/2	52				7 5/8x13 3/8x20 3/4	1' 4"
" " Juice.	1/2	50					
No. 3							
Fruits.	2	70	32	28	23	10 1/2x13 3/4x19	1' 8"
Tomatoes.	2	68	31	27	22		
Asparagus—Square.	2	90				10 1/2x13 3/4x19	1' 8"
Tomato Puree.	2	66					
No. 2 1/2							
Fruits.	2	62	28	24	21	10 1/2x13 3/4x18 1/4	1' 6"
Tomatoes and Vegetables	2	60	28	24	21		
Pineapple.	2	60				10 1/2x13 3/4x18 1/4	1' 6"
Asparagus—Square.	2	64	29	24	21		
Olives.	2	62				10 1/2x13 3/4x18 1/4	1' 6"
Stewed Prunes.	2	64	29	25	22		
No. 2							
Sanitary Berries.	2	46				10 1/8x11 1/4x15 3/4	1'
Vegetables.	2	42	20	16	14		
Pineapple—Talls	2	44	21	18	15	7 1/2x13x18 1/4	1' 1"
" Flats	2	41					
Jams.	2	46	22	19	16	7 1/2x13x18 1/4	1' 1"
Jellies.	2	57	24	19	17		
Baked Beans.	2	45				10 1/4x13x20	1' 6"
Honey.	2	55					
Salmon.	2	48				10 1/4x13x20	1' 6"
No. 1							
Fruits—Talls.	4	68	32	27	23	8 1/2x11 1/2x14 1/8	1'
" Flats.	4	66					
Pineapple—Talls.	4	55				8 1/2x11 1/2x14 1/8	1'
" Squats.	4	44					
Asparagus—Square Tips.	2	36	17	14	11	10 1/4x13x20	1' 6"
" Round Talls	4	66	31	26	22		
Peas.	4	70				10 1/4x13x20	1' 6"
Salmon—Talls	4	70	32	27	23		
" Flats	4	68				10 1/4x13x20	1' 6"
" Oval	4	70					
PICNIC							
Fruits.	4	49	22	18	15	8 3/4x12x18 1/2	1' 2"
Pineapple.	4	53					
Honey.	4	60				6 3/4x13 3/8x20 1/2	1' 2"
Jams.	4	58	27	23	20		
Jellies.	4	56	26	22	19	11 3/8x13 3/8x20 1/4	1' 7"
Baked Beans.	4	50					
GLASS GOODS							
32-ounce Vac. Fruits.	1	52	24	19	12	8 5/8x14 1/8x18 3/8	1' 6"
26 " " "	1	46				8 1/2x13 x17 1/2	1' 3"
16 " Preserves, Jams							
and Jellies.	2	50	24	19	10	6 3/4x13 3/8x20 1/2	1' 2"
Tumbler Jams and Jellies	4	52				11 3/8x13 3/8x20 1/4	1' 7"
Tumbler Honey	4	54					
Pint Catsup.	2	60	27	21	11	9 1/4x11 1/2x17 1/2	1' 2"
Half-pint Catsup	2	34	34	11	6		
Quart Catsup	1	42	25	19	11		



**ASSOCIATIONS**  
**IN THE**  
**CANNING AND PACKING**  
**INDUSTRIES**







## PRINCIPLES OF ORGANIZATION

Some reasons for becoming a member of the National Canners' Association are as follows:

1. To get acquainted with other business men.
2. To learn from other canners actual trade conditions.
3. To better trade credits and collections in general.
4. To learn that good conditions are not the result of individual effort.
5. To get better results by co-operation.
6. To learn to work together for the common good.
7. To help support the canning industry since the canning industry supports you.
8. To do your share in keeping factories and business methods clean and attractive.
9. To get for canned foods the endorsement of the best schools, churches and housewives.
10. To get away from self, find good in others and be one in the best association, composed of the best canners having the best factories, doing the best business, with the best buyers at the best terms and all to be made better as the membership increases.

## EXECUTIVE OFFICERS OF NATIONAL CANNERS' ASSOCIATION SINCE ITS ORGANIZATION

1907

GEORGE G. BAILEY, *President*, Rome, N.Y.  
CHARLES S. CRARY, *Vice-President*, Waukesha, Wis.

### EXECUTIVE COMMITTEE

George G. Bailey, Rome, N.Y.	R. I. Bentley, San Francisco, Cal.
Charles S. Crary, Waukesha, Wis.	J. S. Hughes, St. Paul, Minn.
W. R. Roach, Hart, Mich.	

1908

CHARLES S. CRARY, *President*, Waukesha, Wis.  
L. A. SEARS, *Vice-President*, Chillicothe, Ohio.

### EXECUTIVE COMMITTEE

Charles S. Crary, Waukesha, Wis.	George G. Bailey, Rome, N.Y.
L. A. Sears, Chillicothe, Ohio.	Hugh S. Orem, Baltimore, Md.
W. R. Roach, Hart, Mich.	



## THE MAX AMS MACHINE CO.

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1909

CHARLES S. CRARY, *President*, Waukesha, Wis.  
L. A. SEARS, *Vice-President*, Chillicothe, Ohio.

### EXECUTIVE COMMITTEE

Charles S. Crary, Waukesha, Wis.	S. F. Haserot, Cleveland, Ohio.
L. A. Sears, Chillicothe, Ohio.	Hugh S. Orem, Baltimore, Md.
W. R. Roach, Hart, Mich.	George G. Bailey, Rome, N.Y.

1910

L. A. SEARS, *President*, Chillicothe, Ohio.  
W. R. ROACH, *Vice-President*, Hart, Mich.

### EXECUTIVE COMMITTEE

L. A. Sears, Chillicothe, Ohio.	Hugh S. Orem, Baltimore, Md.
W. R. Roach, Hart, Mich.	S. F. Haserot, Cleveland, Ohio.
Crafton Johnson, Greenwood, Ind.	Gene Dickinson, Eureka, Ill.
C. S. Crary, Waukesha, Wis.	W. O. Hoffecker, Smyrna, Del.
George G. Bailey, Rome, N.Y.	

1911

W. R. ROACH, *President*, Hart, Mich.  
S. F. HASEROT, *Vice-President*, Cleveland, Ohio.

### EXECUTIVE COMMITTEE

W. R. Roach, Hart, Mich.	E. V. Stockham, Perryman, Md.
S. F. Haserot, Cleveland, Ohio.	M. W. Jones, Vinton, Iowa.
Gene Dickinson, Eureka, Ill.	F. F. Wiley, Edinburg, Ind.
H. C. Hemingway, Syracuse, N.Y.	L. A. Sears, Chillicothe, Ohio.
C. H. Bentley, San Francisco, Cal.	F. L. Deming, Chicago, Ill.
W. C. Leitsch, Columbus, Wis.	W. O. Hoffecker, Smyrna, Del.
C. T. Lee, Chicago, Ill.	B. M. Fernald, West Poland, Me.

1912

S. F. HASEROT, *President*, Cleveland, Ohio.  
B. M. FERNALD, *Vice-President*, West Poland, Me.

### EXECUTIVE COMMITTEE

S. F. Haserot, Cleveland, Ohio.	H. C. Hemingway, Syracuse, N.Y.
B. M. Fernald, West Poland, Me.	M. W. Jones, Waterloo, Iowa.
W. R. Roach, Hart, Mich.	F. L. Deming, Chicago, Ill.
L. A. Sears, Chillicothe, Ohio.	T. J. Gorman, Seattle, Wash.
E. V. Stockham, Perryman, Md.	W. O. Hoffecker, Smyrna, Del.
C. T. Lee, Chicago, Ill.	W. C. Leitsch, Columbus, Wis.
C. H. Bentley, San Francisco, Cal.	F. W. Douthitt, Big Stone City, S.D.
Richard Dickinson, Eureka, Ill.	

1913

BERT M. FERNALD, *President*    WILLIAM C. LEITSCH, *1st Vice-President*  
FRANK E. GORRELL, *Secretary, Treasurer, Director of Publicity*  
LOUIS DASHIELL, *Assistant Secretary*



## MOUNT VERNON, N.Y.

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### EXECUTIVE COMMITTEE

B. M. Fernald.....	Maine	M. W. Jones.....	Iowa
W. C. Leitsch.....	Wisconsin	Richard Dickinson .....	Illinois
Samuel F. Haserot.....	Ohio	Frank L. Deming.....	Illinois
Wm. R. Roach.....	Michigan	W. O. Hoffecker.....	Delaware
L. A. Sears.....	Ohio	T. J. Gorman.....	Washington
E. V. Stockham.....	Maryland	F. W. Douthitt.....	Minnesota
Charles T. Lee.....	Illinois	George B. Morrill.....	Maine
C. H. Bentley .....	California	S. F. Taylor.....	New York
H. C. Hemingway.....	New York	Geo. N. Numsen.....	Maryland

### VICE-PRESIDENTS

Wm. C. Smith.....	Indiana	J. L. Moomaw.....	Virginia
F. M. Shook.....	Ohio	G. B. Chatham.....	Wisconsin
W. O. Hoffecker.....	Delaware	J. G. M. Barnes.....	Utah
E. E. Chase.....	California	E. F. Trego.....	Illinois
J. C. Winters.....	New York	M. W. Jones.....	Iowa
M. H. Hegerle.....	Minnesota	Albert T. Myer.....	Maryland
R. B. Gillette .....	Missouri	J. W. McCall .....	Illinois
Frank Gerber .....	Michigan		

### DIRECTORS

B. M. Fernald, Fernald, Keen & True Co., West Poland, Me.  
 W. R. Roach, W. R. Roach & Co., Hart, Mich.  
 E. V. Stockham, Perryman, Md.  
 L. A. Sears, The Sears & Nichols Co., Chillicothe, Ohio  
 Charles T. Lee, Libby, McNeill & Libby, Chicago, Ill.  
 George N. Numsen, William Numsen & Sons Co., Baltimore, Md.  
 C. H. Bentley, California Fruit Cannery Association, San Francisco, Cal.  
 S. F. Haserot, The Haserot Canneries Co., Cleveland, Ohio  
 Wm. C. Leitsch, Columbus Canning Co., Columbus, Wis.  
 Richard Dickinson, Dickinson & Co., Eureka, Ill.  
 W. O. Hoffecker, T. H. Hoffecker Canning Co., Smyrna, Del.  
 F. W. Douthitt, Big Stone Canning Co., Big Stone City, S.D.  
 E. S. Thorne, Geneva Preserving Co., Geneva, N.Y.  
 Frank Gerber, Fremont Canning Co., Fremont, Mich.  
 J. F. Rourke, Grand Island Canning Co., Grand Island, Neb.  
 Friend F. Wiley, Naomi Canning Co., Edinburg, Ind.  
 S. G. Chamberlain, Pierce City Packing Co., Pierce City, Mo.  
 J. G. M. Barnes, Kaysville Canning Co., Kaysville, Utah  
 George B. Chatham, Wausau Canning Co., Wausau, Wis.  
 C. W. McReynolds, Kokomo Canning Co., Kokomo, Ind.  
 H. C. Hemingway, H. C. Hemingway & Co., Syracuse, N.Y.  
 M. W. Jones, Waterloo Canning Corporation, Waterloo, Iowa  
 Frank L. Deming, Pacific-American Fisheries, Chicago, Ill.  
 T. J. Gorman, Gorman & Co., Seattle, Wash.  
 S. Frederic Taylor, Borden's Condensed Milk Co., New York, N.Y.  
 J. Lucian Moomaw, John C. Moomaw, Co., Cloverdale, Va.  
 J. Ed. Guenther, Blue Grass Canning Co., Owensboro, Ky.  
 Charles S. Stevens, Stevens Bros., Cedarville, N.J.  
 J. W. McCall, Gibson Canning Co., Gibson City, Ill.  
 George B. Morrill, Burnham & Morrill Co., Portland, Me.  
 J. W. Cuykendall, Atlantic Canning Co., Atlantic, Iowa  
 W. A. Baldwin, Haiku Fruit & Packing Co., Haiku, Maui, T.H.  
 George H. George, Columbia River Packers' Association, Astoria, Oregon



# THE MAX AMS MACHINE CO.

## STANDING COMMITTEES NATIONAL CANNERS' ASSOCIATION

1913

### ADVISORY BOARD

J. W. McCall, <i>Chairman</i> , Illinois.	
Frank Van Camp, Indiana.	William Moore, Illinois.
Grafton Johnson, Indiana.	W. T. P. Wardrop, Illinois.
George G. Bailey, New York.	J. T. Dorrance, New Jersey.
W. S. Thomas, Michigan.	

### CO-OPERATIVE COMMITTEE WITH WHOLESALE GROCERS

L. A. Sears, <i>Chairman</i> , Ohio.	
W. C. Leitsch, Wisconsin.	W. S. Thomas, Michigan.

### LEGISLATION

E. V. Stockham, <i>Chairman</i> , Maryland.	
George N. Numsen, Maryland.	Henry Burden, New York.
J. P. Olney, New York.	W. A. Wagner, Maryland.

### SCIENTIFIC RESEARCH

Henry Burden, <i>Chairman</i> , New York.	
Gen. Henry G. Sharpe, Washington, D.C.	L. A. Sears, Ohio.
Dr. W. D. Bigelow, Washington, D.C.	W. R. Roach, Michigan.
S. F. Haserot, Ohio.	C. S. Jones, Illinois.
	J. C. Puetz, Illinois.
	R. I. Bentley, California.
	H. A. Baker, <i>Secretary</i> , New York.

### ADJUSTMENT

E. V. Stockham, <i>Chairman</i> , Maryland.	
D. C. Pierce, New York.	C. S. Stevens, New Jersey.

### SANITATION

William C. Leitsch, <i>Chairman</i> , Wisconsin.	
C. T. Lee, Illinois.	F. M. Shook, Ohio.

### RESOLUTIONS

C. T. Lee, <i>Chairman</i> , Illinois.	
R. I. Bentley, California.	J. C. Winters, New York.
W. R. Olney, New York.	George E. Stocking, Illinois.
F. M. Shook, Ohio.	E. E. Chase, California.

### PUBLICITY

F. L. Deming, <i>Chairman</i> , Illinois.	
M. W. Jones, Iowa.	Ira S. Whitmer, Illinois.
F. F. Wiley, Indiana.	James Hutchinson, Wisconsin.
Frank Gerber, Michigan.	

### CONTRACTS, TERMS, WEIGHTS AND MEASURES

L. A. Sears, <i>Chairman</i> , Ohio.	
W. C. Leitsch, Wisconsin.	W. R. Roach, Michigan.
J. C. Winters, New York.	Richard Dickinson, Illinois.

### CANNING MACHINERY AND SUPPLIES' ASSOCIATION

W. C. LANGBRIDGE, <i>President</i> .....	Albany, N.Y.
A. F. W. ST. JOHN, <i>Vice-President</i> .....	Columbus, Ohio.
GEORGE W. COBB, <i>Treasurer</i> .....	New York, N.Y.
H. A. HANNA, <i>Secretary</i> .....	Cadiz, Ohio.

### DIRECTORS

Charles M. Ams., Mt. Vernon, N.Y.	T. A. Scott,.....Cadiz, Ohio.
W. A. Chapman, Silver Creek, N.Y.	



## MOUNT VERNON, N.Y.

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### RESEARCH LABORATORIES ORGANIZED

The National Canners' Association announces the organization of its large laboratories. The personnel is as follows:

Chief Chemist, Dr. W. D. Bigelow, now Assistant Chief of the Bureau of Chemistry, Department of Agriculture, and member of the Board of Food and Drug Inspection, Washington, D.C.

Chief Bacteriologist, Dr. A. W. Bitting, now Food Technologist, Department of Agriculture.

The Association has rented the property at 1739 H Street, N.W., Washington, D.C., and the same is now being fitted up for laboratory purposes.

The Chemical Laboratories commenced operations in the fall of 1913.

The laboratories will be financed in the following manner:

The laboratory will, in every respect, be equal to that of the United States Government laboratories and cost at least \$10,000. It has been donated by the American Can Company.

The research work of the laboratories will cost approximately \$32,000 per year. It is expected that the commercial branch of the laboratories will be about self-sustaining. While the principal object of these laboratories is Research Work, to benefit the canning industry, it is purposed to officer and maintain a commercial branch, which is intended to meet every consistent need of the canners and will be developed as rapidly as possible.

The Committee on Scientific Research of the National Canners' Association will adopt suitable regulations governing this work and also establish a schedule of fees for work done for individual canners. This Committee will determine the problems to be investigated by the Research Laboratories.

It is unnecessary to dwell upon the advantages that will accrue to the industry if these laboratories receive the united support of all of its members.

The personnel of those having active charge of the laboratories will insure their success and incidentally satisfy the consuming public that the members of the National Canners' Association are making every effort to deserve fullest confidence.



## THE MAX AMS MACHINE CO.

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### NATIONAL CANNERS' ASSOCIATION

#### BUREAU OF ADJUSTMENT

In pursuance of the action of the National Canners' Association authorizing the formation of a Bureau of Adjustment and appointing a Committee to have charge of the same, such Bureau has been organized and its purposes outlined as follows:

*First*—That the Bureau of Adjustment undertake the investigation of all differences between buyer and seller to which a member of the National Canners' Association, who is also a subscriber to the Publicity Fund, and has been such for a period of three months and has made the payments required by the By-Laws of the National Canners' Association and Resolution of the Executive Committee, is a party.

*Second*—That the Bureau undertake the registration of all causes of controversy between buyer and seller, which in the opinion of the Committee, are properly within its province, and file for record the brief or statement of the facts furnished to it with reference to such controversy, so that the same will be available to all members of the Bureau.

*Third*—In cases of dispute between buyer and seller, where-in investigation or collection, or both, are desired by the seller, to investigate the claim and if satisfied as to the correctness of the member's contention, to assist in the settlement thereof by proper means to that end, using the established Boards of Arbitration where necessary.

*Fourth*—That the Bureau shall be maintained out of the regular fund of the National Canners' Association, but where special service is rendered, the charges for the same shall be fixed by the Committee and paid by the party for whom such work is rendered.

*Fifth*—This Bureau shall be known as the Bureau of Adjustment, and shall be under the management of a special committee of the National Canners' Association, which shall have entire charge and direction of the same, and when called upon, shall pass finally on the contentions as to the rights of the parties at issue. The Committee, as named at the last session of the Executive Committee of the National Canners' Association, consists of Messrs. E. V. Stockham, Chairman, Perryman, Md.,



## MOUNT VERNON, N.Y.

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D. C. Pierce, of the Hamburg Canning Company, Hamburg, N.Y., and Charles S. Stevens, of Stevens Bros., Cedarville, N.J.

*Sixth*—That the action of this meeting be submitted to the above Committee for its approval before taking effect.

Approved:

EDW. V. STOCKHAM,  
C. S. STEVENS,  
D. C. PIERCE.

### NATIONAL UNIFORM PLAN OF ARBITRATION

ratified by the

#### EXECUTIVE COMMITTEES OF THE

National Canners' Association, National Wholesale Grocers'  
Association and Board of Directors of the National  
Canned Goods and Dried Fruit Brokers'  
Association

#### ARBITRATION CLAUSE

All disputes arising under this contract to be arbitrated in the usual manner, unless there is a regular Arbitration Board appointed by the National Wholesale Grocers' Association and the National Canned Goods and Dried Fruit Brokers' Association and endorsed by the National Canners' Association, for the district in which the dispute arises, and then by three members of such Arbitration Board. The decision of the Arbitrators to be final and binding. Each Arbitrator to be paid five (\$5.00) dollars and necessary expenses. Cost of the arbitration to be paid by loser.

#### AN AGREEMENT

We, the undersigned, hereby covenant and agree to submit to, and do voluntarily submit to the Arbitration Committee appointed by the National Wholesale Grocers' Association, the National Canned Goods and Dried Fruit Brokers' Association, and endorsed by the National Canners' Association in the city of———, for its consideration and adjudication, a controversy now existing between us in regard to as we hereby covenant and agree to and with each other to abide by such decision as the said committee may render in the premises, and hereby authorize



## THE MAX AMS MACHINE CO.

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and empower the said committee to determine whatever allowance, in their opinion, should be awarded. (It is understood that the preceding allowance clause is optional with the parties interested. This option, however, must be exercised before the arbitration takes place.) And we further agree that the findings of this committee shall be as binding upon us, our heirs, administrators, executors, successors or assigns, as would be a decision of the court of last resort of the state of——.

(This agreement to be officially signed and witnessed before a public officer.)

### DETAILED MANAGEMENT REGARDING AN ARBITRATION

When a dispute arises for arbitration the parties thereto shall advise the Chairman of the Arbitration Board for the district in which the dispute takes place. The Chairman of the Arbitration Board shall then appoint a committee of three (3) members of said Board, of which he may be one, to take up the case and decide it under the adopted AGREEMENT. The said committee shall embody their decision in a written paper, which shall be signed by each Arbitrator.

The chairman shall then announce the decision of the committee and shall collect the five dollars (\$5.00) and necessary expenses for each Arbitrator from the loser, or his representative, and pay over to each Arbitrator his share of same.

#### BOARD OF ARBITRATION

Appointed by the

National Wholesale Grocers' Association and National Canned Goods and  
Dried Fruit Brokers' Association

endorsed by the

#### NATIONAL CANNERS' ASSOCIATION

In Connection with the National Uniform Plan of Arbitration

NEW YORK

#### NATIONAL WHOLESALE GROCERS' ASSOCIATION

W. B. Timms, <i>Chairman</i> .....	Austin, Nichols & Co.
Sig. Seeman .....	Seeman Bros.
Philip C. Staib.....	Koenig & Schuster

#### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

W. D. Breaker.....	U. H. Dudley & Co.
A. L. North.....	North & Dalzell
F. A. Aplin.....	J. K. Armsby Co.



## MOUNT VERNON, N.Y.

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### BOSTON

#### NATIONAL WHOLESALE GROCERS' ASSOCIATION

Geo. B. Wason, *Chairman*.....The Wason Co.  
Austin L. Baker.....Eldridge, Baker & Co.  
Frank Bott .....The Twitchell-Champlin Co., Portland

#### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

John Chany .....  
Frank B. Priest.....The J. K. Armsby Co.  
W. R. Conover.....Clemmer & Conover

### PITTSBURGH

#### NATIONAL WHOLESALE GROCERS' ASSOCIATION

D. C. Shaw, *Chairman*.....D. C. Shaw & Co.  
Thomas C. Jenkins.....Thomas C. Jenkins  
James A. McAteer.....James A. McAteer & Sons

#### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

Geo. A. Buse.....Buse & Caldwell  
Harry W. Dunlap .....  
E. T. Shantz .....

### CHICAGO

#### NATIONAL WHOLESALE GROCERS' ASSOCIATION

Robert J. Roulston, *Chairman*.....McNeill & Higgins Co.  
W. E. Stearns.....Reid, Murdoch & Co.  
C. E. Wilcox.....Sprague, Warner & Co.

#### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

W. H. Nicholls.....W. H. Nicholls & Co.  
T. J. O'Byrne.....T. J. O'Byrne & Co.  
Henry Colberg .....

### ST. LOUIS

#### NATIONAL WHOLESALE GROCERS' ASSOCIATION

F. G. Scudder, *Chairman*.....The Scudder-Gale Grocery Co.  
Geo. A. Roth.....Adam Roth Grocery Co.  
Warren Goddard .....The Goddard Grocery Co.

#### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

Jos. N. Gettys.....Ford & Doan  
Louis Rosen.....Rosen-Reichardt Brokerage Co.  
Edward L. Stanton.....E. L. Stanton & Co.

### KANSAS CITY

#### NATIONAL WHOLESALE GROCERS' ASSOCIATION

J. C. Lester, *Chairman*.....The Ridenour-Baker Grocery Co.  
O. V. Wilson.....The Ryley-Wilson Grocery Co.  
F. C. Johnson.....The Kawmo Wholesale Grocery Co.

#### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

Henry Flarsheim .....Seavey & Flarsheim  
Boyd W. Harwood.....Gabel-Johnson-Harwood Brokerage Co.  
L. R. Bolles.....Goodlett & Bolles



# THE MAX AMS MACHINE CO.

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## OMAHA

### NATIONAL WHOLESALE GROCERS' ASSOCIATION

John S. Brady, *Chairman*.....McCord-Brady Co.  
Charles H. Pickens.....Paxton & Gallagher Co.  
R. B. Comstock.....Allen Bros. & Co.

### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

J. P. Fallon.....Seavey & Flarsheim  
C. B. Shackelford.....  
H. S. Sussmann.....Meinrath Brokerage Co.

## DENVER

### NATIONAL WHOLESALE GROCERS' ASSOCIATION

Charles Hatfield, *Chairman*.....The C. S. Morey Mercantile Co.  
C. E. Cowell.....The Struby-Estabrook Mercantile Co.  
P. S. Hessler.....The P. S. Hessler Mercantile Co.

### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

W. S. Hurd.....C. R. Hurd Brokerage Co.  
A. J. Nicholls.....A. J. Nicholls Co.  
W. N. W. Blayney.....

## SAN FRANCISCO

### NATIONAL WHOLESALE GROCERS' ASSOCIATION

Victor H. Tuttle, *Chairman*.....R. L. Craig & Co., Los Angeles  
S. Sussman.....Sussman, Wormser & Co.  
Frank B. Peterson.....Frank B. Peterson & Co.

### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

Walter M. Field.....  
Oscar Hoffman.....Hoffman & Greenlee  
Harry C. Taft.....Taft & Suydam

## SEATTLE

### NATIONAL WHOLESALE GROCERS' ASSOCIATION

James S. Goldsmith, *Chairman*.....Schwabacher Bros. & Co.  
J. C. Lang.....National Grocery Co.  
F. C. Sylvester.....Sylvester Bros. Co.

### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

C. H. Clarke.....Kelley-Clarke Co.  
George Burrington.....Burrington-Burton Co.  
Geo. L. F. Gault.....Ariss, Campbell & Gault

## NEW ORLEANS

### NATIONAL WHOLESALE GROCERS' ASSOCIATION

Albert Mackie, *Chairman*.....Albert Mackie Grocery Co., Ltd.  
W. L. Saxon.....The Smith Bros. Co., Ltd.  
H. T. Cottam.....The H. T. Cottam Co., Ltd.

### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

D. R. Graham.....Graham-Boswell Co.  
Fred Miller.....W. A. Gordon Co.  
Tatman Thompson\* .....Tatman Thompson Co.

\* Deceased.



## MOUNT VERNON, N.Y.

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### PORTLAND, ORE.

#### NATIONAL WHOLESALE GROCERS' ASSOCIATION

Frank A. Spencer, *Chairman*.....Allen & Lewis  
Louis Lang.....Lang & Co.  
J. T. Brumfield.....Mason, Ehrman & Co.

#### NATIONAL C. G. & D. F. BROKERS' ASSOCIATION

H. M. Haller.....Kelley, Clark Co.  
F. W. Ariss.....Ariss, Campbell & Gault  
Richard Adams.....Parrott & Co.

### PEORIA, ILL.

#### NATIONAL GROCERS' ASSOCIATION

John Riggs, *Chairman*.....Oakford & Fahnestock  
Milo E. Reeve.....John McCoy Co.  
Alex Furst.....Jobst, Bethard Co.

#### NATIONAL BROKERS' ASSOCIATION

G. R. Garrettson.....Jones Brothers  
Jos. Keevers.....I. H. Lyford Co.  
C. A. Hoxsie.....C. A. Hoxsie & Co.

### CLEVELAND, OHIO

#### NATIONAL GROCERS' ASSOCIATION

Lyman F. Narten, *Chairman*.....The Weidman Co.  
Frank C. Wagner.....Higgins-Babcock-Hurd Co.  
Geo. A. Jones.....The William Edwards Co.

#### NATIONAL BROKERS' ASSOCIATION

B. W. Housum.....The Housum-Grace Co.  
A. G. Gibson.....A. G. Gibson & Co.  
Paul E. Kroehle.....Paul E. Kroehle Co.

### RICHMOND, VA.

#### NATIONAL GROCERS' ASSOCIATION

Peyton Grymies, *Chairman*.....Stokes-Grymes Grocery Co.  
Clarence D. Coleman.....Spencer-Nunnamaker Co.  
Isaac B. Davenport.....Christian & Winfree Co.

#### NATIONAL BROKERS' ASSOCIATION

Robert M. Smith.....Robert M. Smith & Co.  
John Adam.....John Adam  
Sanford Fleming.....T. S. Southgate & Co.

### CINCINNATI, OHIO

#### NATIONAL GROCERS' ASSOCIATION

R. B. Henley, *Chairman*.....R. B. Henley & Co.  
H. J. Esterman.....Esterman-Verkamp-Murphy Co.  
Edward Flach.....Flach Bros. Grocery Co.

#### NATIONAL BROKERS' ASSOCIATION

Ed. T. Klum.....Ed. T. Klum  
H. B. Perlee.....H. B. Perlee Brokerage Co.  
W. R. Chace.....W. R. Chace



## THE MAX AMS MACHINE CO.

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### TOLEDO, OHIO

#### NATIONAL GROCERS' ASSOCIATION

Geo. S. Harnit, *Chairman*.....Harnit & Hewitt Co.  
A. E. Overmyer.....Overmyer Co.  
Norman Meyer .....R. A. Bartley

#### NATIONAL BROKERS' ASSOCIATION

Harry C. Hassett.....Harry C. Hassett  
Geo. E. Bell.....Geo. E. Bell  
J. W. Thatcher.....J. W. Thatcher

### DETROIT, MICH.

#### NATIONAL GROCERS' ASSOCIATION

S. J. Campbell, *Chairman*.....Lee & Cady  
E. A. Elliott.....C. Elliott & Co.  
Matthew Hannon .....Michigan Grocery Co.

#### NATIONAL BROKERS' ASSOCIATION

F. E. Bowen.....Floyd E. Bowen & Co.  
James Baldwin .....Baldwin & Squier  
Herbert Smith .....F. B. Neuhoﬀ Co.

### OKLAHOMA CITY, OKLA.

#### NATIONAL GROCERS' ASSOCIATION

J. T. Robinson, *Chairman*.....Carroll, Brough & Robinson  
C. E. Vancleef.....Ridenour-Baker Mercantile Co.  
O. D. Halsell.....Williamson-Halsell-Frazer Co.

#### NATIONAL BROKERS' ASSOCIATION

W. M. Gillespie.....Meinrath Brokerage Co.  
J. R. Russell.....Russell Brokerage Co.  
W. T. Love.....Oklahoma Commerce Co.

### PHILADELPHIA, PA.

#### NATIONAL GROCERS' ASSOCIATION

Thos. Roberts, Jr., *Chairman*.....Thos. Roberts & Co.  
F. B. Reeves, Jr.....Reeves-Purvin & Co.  
Wm. C. Halpen.....Halpen-Green & Co.

#### NATIONAL BROKERS' ASSOCIATION

Charles Roberts .....Jessup & Roberts  
W. G. Bonstedt.....W. G. Bonstedt & Co.  
John J. Hallowell.....T. A. James & Co., Inc.

### LOS ANGELES, CAL.

#### NATIONAL GROCERS' ASSOCIATION

John Krafft, *Chairman*.....Haas, Baruch & Co.  
Victor H. Tuttle.....R. L. Craig & Co.  
L. C. Norris.....Stetson-Barrett & Co.

#### NATIONAL BROKERS' ASSOCIATION

Roth Hamilton .....Hamilton & Menderson  
F. W. Stith.....F. W. Stith Company  
O. B. Franz.....Lee-Franz Brokerage Co.



## MOUNT VERNON, N.Y.

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### INDIANAPOLIS, IND.

#### NATIONAL GROCERS' ASSOCIATION

Ames W. Reagen, *Chairman*.....J. C. Perry & Co.  
John C. Smith.....Indianapolis Fancy Grocery Co.  
Roy L. Davidson.....M. O'Connor & Co.

#### NATIONAL BROKERS' ASSOCIATION

Eugene Larger .....Buning-Larger Co.  
Harry A. Angell.....Harry C. Gilbert Co.  
Frederick Wingate .....Frederick Wingate

### MEMPHIS, TENN.

#### NATIONAL GROCERS' ASSOCIATION

W. C. Early, *Chairman*.....W. C. Early Co.  
Joseph H. Stewart.....Stewart-Gwynne Co.  
S. H. Phillips.....Shanks, Phillips & Co.

### ST. PAUL-MINNEAPOLIS, MINN.

#### NATIONAL GROCERS' ASSOCIATION

E. O. Harmegules, *Chairman*.....Griggs, Cooper & Co.  
Lullus Quinlan .....Foley Bros. & Kelly  
George C. Pettigrew.....George R. Newell Co.

#### NATIONAL BROKERS' ASSOCIATION

Albert Hall .....Emerson & Hall  
F. S. Abernethy.....F. S. Abernethy & Co.  
T. J. Preece.....T. J. Preece Co.

### JACKSONVILLE, FLA.

#### NATIONAL GROCERS' ASSOCIATION

John Ball, *Chairman*.....Consolidated Grocery Co.  
C. W. Bartleson.....W. C. Bartleson Co.  
H. C. Van Horn.....Baker & Holmes Co.



## THE MAX AMS MACHINE CO.

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### ANNUAL CONVENTION OF THE NATIONAL CANNERS' ASSOCIATION

Louisville, Ky., February 10 to 13, 1913

#### PROGRAM

##### FIRST DAY

*Monday, February 10*

Machinery Hall open all day. There will be no session of the convention this day. Everyone is urged immediately upon arrival to come to the Secretary's office at one of the hotels and register.

It is exceedingly important that each person register immediately upon arrival, as the official badge will be necessary to obtain admission to the Machinery Hall and convention halls. Monday evening at 8 o'clock meeting of directors of National Canners' Association in Leather Room, Hotel Seelbach.

*The Machinery Hall will be open all of Monday but will be closed Tuesday, Wednesday and Thursday until 1 o'clock p.m. each day and open all of Friday and Saturday.*

The sessions of the National Canners' Association will be held in the convention hall on the top floor of the Hotel Seelbach.

The sessions of the Canned Goods and Dried Fruit Brokers' Association will be held in the Red Room of the Hotel Seelbach.

#### NATIONAL CANNED GOODS AND DRIED FRUIT BROKERS' ASSOCIATION

##### TENTH ANNUAL MEETING

Will be held in two sessions: Tuesday, February 11, 10 a.m.  
and Wednesday, February 12, 10 a.m., in the Red  
Room, Hotel Seelbach

All Brokers whether members of the Association or not are cordially invited to be present at these meetings.

##### SECOND DAY

*Tuesday, February 11*

Machinery Hall closed until 1 o'clock p.m.

Meeting Hall, Hotel Seelbach

10 o'clock a.m. F. W. Keisker, President Louisville Convention  
and Publicity League, presiding.



## MOUNT VERNON, N.Y.

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Address of Welcome—Honorable W. O. Head, Mayor of Louisville.

Response—Honorable B. M. Fernald, First Vice-president National Cannery Association, West Poland, Me.

Addresses of Presidents—S. F. Haserot, President National Cannery Association.

T. A. Scott, President Canning Machinery & Supplies Association.

J. H. Kline, President Canned Goods and Dried Fruit Brokers' Association.

Address—John A. Green, Secretary National Retail Grocers' Association, Cleveland, Ohio.

Address—"The Canning Industry in the Conservation and Pure Food Movements," Dr. Samuel C. Prescott, The Boston Bio-Chemical Laboratory, Boston.

Address—Frank Van Camp, Cannery Exchange, Chicago, Ill.

Address—"Value of Chemical and Sanitary Certification of Canned Foods," A. H. Baker, Chief Chemist American Can Company.

Address—"Report on Pea Blight Investigation in Wisconsin" (illustrated with lantern slides), Professor R. E. Vaughn, University of Wisconsin, Madison, Wis.

The recommendations of the President of the National Cannery Association will be furnished in printed form, together with the report of the Secretary and Treasurer.

Announcement of Convention and Special Committees.

*Tuesday Afternoon, February 11*

Machinery Hall open. No session of National Cannery Association, except special committee work.

### THIRD DAY

*Wednesday, February 12*

Machinery Hall closed until 1 o'clock p.m.

Meeting Hall, Hotel Seelbach

10 o'clock a.m. Address—"Co-operative Insurance," John Bardwell, St. Louis.

Address—"Farming the Seas," T. J. Gorman, Gorman & Company, Inc., Seattle, Wash.



## THE MAX AMS MACHINE CO.

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Address—"Some Aspects of the Pure Food Law," Congressman J. Harry Covington, Interstate and Foreign Commerce Committee, House of Representatives.

Address—"Between the Lines," George E. Lichty, President National Wholesale Grocers' Association, Waterloo, Iowa.

Address—John W. Lux, President National Retail Grocers' Association, St. Paul, Minn.

Address—"Label Requirements of Food Packages Entering Interstate Commerce," George L. Flanders, Counsel New York Department of Agriculture.

Address—"Trade Development Service of the Government," A. H. Baldwin, Chief Bureau of Foreign and Domestic Commerce, Department of Commerce and Labor, Washington, D.C.

Address—"The Opportunity of Trade Organizations," Dr. W. D. Bigelow, Assistant Chief Bureau of Chemistry, Department of Agriculture, Washington, D.C.

Report of Committee on Nominations.

Election of Officers.

### *Wednesday Morning, 10 o'clock*

Meeting Canning Machinery and Supplies' Association, Leather Room, Hotel Seelbach. Nomination of Officers and other Association business.

### *Wednesday Afternoon*

Machinery Hall open. National Cannery Association Committee meeting only.

## FOURTH DAY

### *Thursday, February 13*

Machinery Hall closed until 1 o'clock p.m.

Meeting Hall, Hotel Seelbach

10 o'clock A.M. Address—Dr. William H. Frear, State College, Pennsylvania.

Canned Foods Week and Publicity—The balance of this session will be devoted to these subjects and others pertaining to the organization.



## MOUNT VERNON, N.Y.

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### *Thursday Afternoon*

#### Machinery Hall Open

Address—"Salmon Canning" (illustrated), W. I. Crawford,  
Secretary Puget Sound Salmon Cannery Association,  
Seattle, Wash.

Reports of all committees.

Meeting of Executive Committee.

During the Convention, Dr. A. W. Bitting, Food Technologist, Department of Agriculture, will exhibit special lantern slides illustrating the canning industry.

### *Thursday Evening*

Theater party at Mary Anderson and Masonic Theaters tendered by the American Can Company.

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The National Canned Goods and Dried Fruit Brokers' Association has been in existence since 1904. Its members comprise the best and most reliable brokerage firms of the country. This Association first came to life in Columbus during the Cannery convention held in that city. Ever since its formation its officers and members have been working shoulder to shoulder with the cannery for the improvement of the business conditions, and as co-operation is the watchword of business at the present time, the members of the National Cannery Association should surely do everything in their power to co-operate with, and work through, the members of this Association.

#### NATIONAL CANNED GOODS AND DRIED FRUIT BROKERS' ASSOCIATION

Secretary's Office, 326 W. Madison St., Chicago

##### OFFICERS

##### *President:*

RICHARD DALLAM.....Bel Air, Md.  
Smith-Webster Co.

##### *1st Vice-President:*

M. J. FLARSHHEIM.....St. Louis, Mo.  
Seavey & Flarshheim Brokerage Co.

##### *2d Vice-President:*

WM. SILVER .....Aberdeen, Md.  
Wm. Silver & Co., Inc.

##### *3d Vice-President:*

ROBT. E. SMALL.....Seattle, Wash.  
Kelley Clarke Co.

##### *Secretary:*

JAS. M. HOBBS.....Chicago, Ill.  
Flannery & Hobbs.

##### *Treasurer:*

HENRY COLBERG.....Chicago, Ill.  
Henry Colberg.



## THE MAX AMS MACHINE CO.

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### DIRECTORS

#### *One Year:*

E. F. Wallace. Oklahoma City, Okla.  
Wallace Brokerage Co.  
J. Cecil Smith.....Baltimore, Md.  
Hanna & Smith.

#### *Two Years:*

Frank Aplin.....New York, N.Y.  
J. K. Armsby Co.  
Paul W. Paver .....Chicago, Ill.  
The J. M. Paver Co.

#### *Three Years:*

Oscar Hoffman..San Francisco, Cal.  
Hoffman & Greenlee.  
Claude Van Zandt, Fort Worth, Tex.  
Claude Van Zandt & Co.

### NATIONAL CANNED GOODS AND DRIED FRUIT BROKERS' ASSOCIATION COMMITTEES

#### ADVISORY

Jos. H. Kline, *Chairman*, Cleveland, Ohio.  
Charles S. Jones.....Peoria, Ill. Walter A. Frost.....Chicago, Ill.

#### CO-OPERATION

John A. Lee, *Chairman*, Chicago, Ill.  
Harry C. Taft ..San Francisco, Cal. John Chany.....Boston, Mass.  
Fred Fabian..Salt Lake City, Utah. H. F. C. Kilian....New York City.

#### ARBITRATION

William Silver, *Chairman*, Aberdeen, Md.  
Fred A. Alpin.....New York, N.Y. J. L. Ford, Jr.....St. Louis, Mo.  
John R. Adams.....Chicago, Ill. C. P. McFarland..Los Angeles, Cal.

#### FACTORY SANITATION

William Silver, *Chairman*, Aberdeen, Md.  
H. C. Gilbert....Indianapolis, Ind. Charles Corby .....New York, N.Y.  
M. G. Block.....Kansas City, Mo. F. W. Smith.....Los Angeles, Cal.

#### COMMERCE AND TRANSPORTATION

George R. Freeman, *Chairman*, Fargo, N.D.  
F. W. Stith.....Los Angeles, Cal. H. Goldschmidt ..San Antonio, Tex.  
T. J. Preece....Minneapolis, Minn. James R. Baker.....Chicago, Ill.

#### FINANCE

Luman R. Wing, *Chairman*, Chicago, Ill.  
George Pettijohn .....Chicago, Ill. W. R. Conover .....Boston, Mass.

#### PURE FOOD

Charles S. Jones, *Chairman*, Peoria, Ill.  
F. E. Booth....San Francisco, Cal. F. B. Greene.....Portland, Me.  
C. A. Taylor.....Brunswick, Ga. W. R. Chace .....Cincinnati, Ohio.

#### STANDARDS

P. W. Paver, *Chairman*, Chicago, Ill.  
Thomas J. Meehan..Baltimore, Md. H. M. Reed.....Waterloo, Iowa.  
Ralph Crary.....Waukesha, Wis. A. B. Field.....San Francisco, Cal.



**ENTERTAINMENT**

J. Cecil Smith, *Chairman*, Baltimore, Md.

E. C. Shriner.....	Baltimore, Md.	C. W. Baker.....	Aberdeen, Md.
Thomas J. Meehan..	Baltimore, Md.	R. Harry Webster....	Bel Air, Md.

J. Cecil Smith, *Chairman*, Baltimore, Md.  
E. C. Shriner.....Baltimore, Md. C. W. Baker.....Aberdeen, Md.  
Thomas J. Meehan..Baltimore, Md. R. Harry Webster....Bel Air, Md.

John L. Flannery, Jr., *Chairman*, Chicago, Ill.  
Isadore Salinger.....St. Louis, Mo.      O. C. Stiles.....Boston, Mass.  
F. S. Abernethy..Minneapolis, Minn.      Frank L. Warner, San Francisco, Cal.

Oscar Hoffman, *Chairman*, San Francisco, Cal.  
C. C. Kinsey....San Francisco, Cal. Walter A. Field, San Francisco, Cal.

O. B. McGLASSON, <i>President</i> .....	
W. C. McCONAUGHEY, <i>First Vice-President</i> .....	Parkersburg, W. Va.
P. C. DRESCHER, <i>Second Vice-President</i> .....	Sacramento, Cal.
ROBERT B. BURSCK, <i>Third Vice-President</i> .....	Philadelphia, Pa.
A. M. WILSON, <i>Fourth Vice-President</i> .....	Hartford, Conn.
O. J. MOORE, <i>Fifth Vice-President</i> .....	Sioux City, Iowa.

A. A. BEEBE, <i>President</i>	JAMES C. VEALE, <i>Treasurer</i> Reid, Murdoch & Co.
BERT J. DICKENS, <i>Vice-President</i> Franklin MacVeagh & Co.	JAMES M. HOBBS, <i>Secretary</i> Flannery & Hobbs.

S. B. Steele.....	Steele-Wedeles Co.
Luman R. Wing ....	Luman R. Wing & Co.
W. A. Frost .....	Walter A. Frost & Co.

F. A. TORSCH, *President*.....  
 GEORGE N. NUMSEN, *Vice-President*.....  
 LEANDER LANGRALL, *Treasurer*.....  
 WILLIAM F. ASSAU, *Secretary*.....  
 MORRIS SOPER, *Counsel*.....  
 CHARLES GLASER, *Chemist*.....

Hugh S. Orem.  
John S. Gibbs, Jr.

E. C. White.	W. A. Wagner.
C. J. Schenkel.	J. R. Baines.
James B. Platt.	



## THE MAX AMS MACHINE CO.

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### COMMITTEE ON COMMERCE

R. M. Gibbs.	Louis Grebb.
C. J. Brooks.	D. H. Stevenson.
John Schall.	

### COMMITTEE ON LEGISLATION

George N. Nuunsen.	A. T. Myer.
George T. Phillips.	W. E. Robinson.
E. H. Miller.	

### COMMITTEE ON CLAIMS

H. S. Orem.	C. F. Butterfield.
B. Hamburger.	W. A. Silver.
Frank Curry.	

### HOSPITALITY COMMITTEE

T. J. Meehan.	H. W. Krebs.
E. A. Keer.	

### BROKERS' COMMITTEE

H. A. Waidner.	Henry Fleming.
William Grecht.	

### WESTERN CANNERS' ASSOCIATION

IRA S. WHITMER, *President*.....Bloomington, Ill.  
CARLOS M. KELLEY, *Vice-President*.....Hampton, Iowa.  
FRIEND F. WILEY, *Secretary and Treasurer*.....Edinburgh, Ind.

### ILLINOIS CANNERS' ASSOCIATION

E. F. TREGG, *President*.....Hoopeston, Ill.  
RICHARD DICKINSON, *Vice-President*.....Eureka, Ill.  
H. D. BARNES, *Secretary and Treasurer*.....Elgin, Ill.

### INDIANA CANNERS' ASSOCIATION

W. C. SMITH, *President*.....Delphi, Ind.  
W. H. DYER, *Vice-President*.....Vincennes, Ind.  
HARRY W. MCCARTNEY, *Secretary and Treasurer*.....Greenwood, Ind.

### OHIO CANNERS' ASSOCIATION

F. M. SHOOK, *President*.....Urbana, Ohio.  
W. W. WILDER, *Vice-President*.....Clyde, Ohio.  
C. C. McDONALD, *Secretary and Treasurer*.....Elyria, Ohio.

### NEW YORK STATE CANNED GOODS PACKERS' ASSOCIATION

J. C. WINTERS, *President*.....Mt. Morris, N.Y.  
E. S. THORNE, *Vice-President*.....Geneva, N.Y.  
A. R. HATFIELD, *Secretary*.....Utica, N.Y.  
A. R. HUNT, *Treasurer*.....Oswego, N.Y.



## MOUNT VERNON, N.Y.

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### IOWA CANNERS' ASSOCIATION

O. MITCHELL, *President*.....Waverly, Iowa.  
W. C. ELLIS, *Vice-President*.....Sac City, Iowa.  
GEORGE W. DRAKE, *Secretary and Treasurer*.....Dexter, Iowa.

### MINNESOTA CANNERS' ASSOCIATION

M. H. HEGERLE, *President*.....St. Bonifacius, Minn.  
A. A. CHAPMAN, *Vice-President*.....Olivia, Minn.  
F. W. DOUTHITT, *Secretary*.....Bigstone, S.D.  
J. S. STATLER, *Treasurer*.....Faribault, Minn.

### MISSOURI VALLEY CANNERS' ASSOCIATION

R. B. GILLETTE, *President*.....Marionville, Mo.  
W. P. HARRINGTON, *Vice-President*.....Dearborn, Mo.  
L. I. MOORE, *Secretary and Treasurer*.....Oregon, Mo.

### WISCONSIN CANNERS' ASSOCIATION

GEORGE B. CHATHAM, *President*.....Waussau, Wis.  
D. J. FITZGERALD, *Vice-President*.....Oconto, Wis.  
A. M. JOHNSON, *Treasurer*.....Manitowoc, Wis.  
J. A. HAGEMAN, *Secretary*.....Fort Atkinson, Wis.

### MICHIGAN CANNERS' ASSOCIATION

W. S. THOMAS, *President*.....Grand Rapids, Mich.  
W. R. ROACH, *Vice-President*.....Hart, Mich.  
FRANK GERBER, *Treasurer*.....Fremont, Mich.

### NATIONAL KRAUT PACKERS' ASSOCIATION

P. J. CLAUSEN, *President*.....Chicago, Ill.  
WILLIAM H. ERDRICH, *Vice-President*.....Bellevue, Ohio.  
W. W. WILDER, *Secretary and Treasurer*.....Clyde, Ohio.

### BALTIMORE CANNED GOODS EXCHANGE

A. F. TORRSCH, *President*.....  
GEORGE N. NUMSEN, *Vice-President*.....  
W. F. ASSAU, *Secretary*.....  
LEANDER LANGRALL, *Treasurer*.....

### NATIONAL PICKLE PACKERS' ASSOCIATION

WILLIAM BALLINGER, *President*.....Keokuk, Iowa.  
FRANK A. BROWN, *Secretary and Treasurer*.....Chicago, Ill.

### PUGET SOUND SALMON CANNERS' ASSOCIATION

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MILLER FREEMAN, *Secretary*.....Seattle, Wash.

### THE TRI-STATE PACKERS' ASSOCIATION

W. O. HOFFECKER, *President*.....Smyrna, Del.  
GEORGE E. DIAMENT, *Vice-President*.....New Jersey.  
HARRY L. CANNON, *Vice-President*.....Delaware.  
FREDERICK A. TORRSCH, *Vice-President*.....Maryland.  
C. M. DASHIELL, *Secretary and Treasurer*.....Princess Anne, Md.



## THE MAX AMS MACHINE CO.

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### EXECUTIVE COMMITTEE

C. S. Stevens.	A. R. Merritt.
Luke F. Smith.	Leander Langrall.
George L. Pheiffer.	Charles T. Wrightson.
Daniel Hirsch.	H. B. Messenger.
J. S. Reynolds.	Fred R. Owens.
John Watkins.	Albanus Phillips.
E. C. White.	Henry W. Roberts.
C. W. Baker.	L. M. Milbourne.

### AMERICAN SPECIALTY MANUFACTURERS' ASSOCIATION

J. E. LINIHAN, <i>President</i> .....	Chicago, Ill.
C. A. MONAGLE, <i>Secretary</i> .....	New York City, N.Y.

### MAINE CANNERS' ASSOCIATION

B. M. FERNALD, <i>President</i> .....	West Poland, Me.
H. C. BAXTER, <i>Vice-President</i> .....	Portland, Me.
HORACE F. WEBB, <i>Secretary</i> .....	Portland, Me.

### SOUTHERN CANNERS' ASSOCIATION

B. A. CRADDOCK, <i>President</i> .....	Humboldt.
J. C. SAUNDERS, JR., <i>Vice-President</i> .....	
FESTUS RHODES, <i>Secretary</i> .....	Whiteville.

### GRAPE GROWERS' ASSOCIATION OF CALIFORNIA

E. M. SHEEHAN, <i>President</i> .....	
C. J. WETMORE, <i>Vice-President</i> .....	
FRANK A. BUSSE, <i>Treasurer</i> .....	
HORATIO A. STOLL, <i>Secretary</i> .....	

### CALIFORNIA BEAN DEALERS' ASSOCIATION

GUS BRAY, <i>President</i> .....	Bray Bros., San Francisco, Cal.
SCOTT F. ENNIS, <i>Vice-President</i> ...	Ennis-Brown Co., Sacramento, Cal.
S. SINSHEIMER, <i>Treasurer</i> .....	Sinsheimer & Co., San Francisco, Cal.
HENRY P. DIMOND, <i>Secretary and General Manager</i> .....	

### NATIONAL APPLE SHIPPERS' ASSOCIATION

R. H. PENNINGTON, <i>President</i> .....	Evansville, Ind.
E. W. J. HEARTY, <i>Vice-President</i> ,.....	Boston, Mass.
WAYNE M. FRENCH, <i>Treasurer</i> .....	New York, N.Y.

### EXECUTIVE COMMITTEE

#### A. Warren Patch, *Chairman*.

E. N. Loomis.	C. B. Schafer.
D. N. Minnick.	L. K. Sutton.

### CANNERS' LEAGUE OF CALIFORNIA

E. F. CHASE, <i>President</i> .....	
J. K. ARMSBY and F. F. STETSON, <i>Vice-Presidents</i> .....	
JAY DEMING, <i>Treasurer</i> .....	
H. P. DIMOND, <i>Secretary</i> .....	San Francisco, Cal.



## MOUNT VERNON, N.Y.

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### EXECUTIVE COMMITTEE

C. L. Hunt.	R. M. Barthold.
L. M. Brinker.	E. A. Wilder.
Walter M. Field.	

L. F. Graham has served as president of the League ever since it was formed, but requested that he be relieved from the duties of office, as he is in poor health.

### UTAH CANNERS' ASSOCIATION

J. G. M. BARNES, <i>President</i> .....	Kaysville.
RICHARD STRINGHAM, <i>Vice-President</i> .....	Bountiful.
H. L. HERRINGTON, <i>Secretary and Treasurer</i> .....	Ogden.

### DIRECTORS

J. G. M. Barnes.	W. J. Parker.
Richard Stringham.	A. L. Brewer.
H. L. Herrington.	William Craig.

### VIRGINIA CANNERS' ASSOCIATION

F. D. BOLTON, <i>President</i> .....	
J. W. GILLASPIE, <i>Vice-President</i> .....	
W. C. SMILEY, <i>Secretary and Treasurer</i> .....	

### EXECUTIVE COMMITTEE

#### *For Boustourt County:*

W. G. Spigle.	C. E. Bolton.
William Barley.	J. L. Moomaw.
W. P. Crumpacker.	

#### *For Franklin County:*

H. O. B. Jamison.	J. A. Fisher.
J. C. Flora.	

#### *For Bedford County:*

H. A. Standing.	William Barker.
S. W. Huddleston.	

#### *For Roanoke County:*

D. W. Goode.	J. W. Bowin.
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### NORTH PACIFIC FRUIT DISTRIBUTORS

The North Pacific Fruit Distributors, the central agency which was organized for the purpose of selling the fruit of the Pacific Northwest, has seven sub-central organizations already working, as follows: Yakima Valley Fruit Growers' Association, North Yakima, Wash.; Apple Growers' Association, Hood River, Ore.; Idaho-Oregon Fruit Growers' Association, Payette, Idaho; Walla Walla District Fruit Distributors, Walla Walla, Wash.; Montana Fruit Distributors, Hamilton, Mont.; Spokane Fruit Growers' Co., Spokane, Wash.; Central Idaho-Washington Fruit Growers' Association, Garfield, Wash. Two more sub-centrals are in progress of organization, namely, the Wenatchee (Washington) and the Western Oregon. Many of the Wenatchee growers have expressed an individual willingness to go into the new organization, and the sub-central there is the result.



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The correct list of the officers of the North Pacific Fruit Distributors is as follows: H. F. Davidson, Hood River, Ore., president; W. M. Yost, Meridian, Idaho, vice-president; H. C. Sampson, Spokane, Wash., secretary and treasurer. These officers and F. E. Sickles, North Yakima, Wash., Harry Huber, Milton, Ore., and W. M. Sackett, Corvallis, Mont., are the trustees of the corporation. J. H. Robbins is general manager, N. C. Richards, general counsel, and J. T. Ronan, traffic manager and claim agent. Sales managers are B. A. Perham, Spokane, Wash., Wilmer Sieg, Hood River, Ore., and H. E. Smith, Spokane, Wash. The headquarters of the Distributors is in the Chamber of Commerce Building, Spokane, Wash.

### CALIFORNIA ASSOCIATED RAISIN COMPANY

The following announcement has just been sent out by the California Associated Raisin Company, and it is presumed that the firms which are not mentioned in this list are not at present intending to enter into terms with the Associated:

To the Raisin Growers:

As this company has now completed arrangements with most of the packers we expect to have working with us, for the packing and selling of your raisins, we feel that you should be fully advised as to whom the firms are who have shown a desire to work with this corporation on such terms as the board of the California Associated Raisin Company have found satisfactory.

The following are the firms signed to date: Malaga Packing Company, Mowatt & Company, Selma Fruit Company, North Ontario Packing Company, Kings County Raisin and Fruit Company, Phoenix Packing Company, Castle Brothers, Fresno Home Packing Company, Bonner Packing Company, Giffen-Hobbs Company, Dinuba Farmers' Union, California Farmers' Union, Rosenberg Brothers & Company, Griffin & Skelley Company, California Cured Fruit Company, Armstrong Fruit Company.

As a great many raisin growers are also producers of other dried fruits, it would seem reasonable to suppose that not alone the raisin growers who produce dried fruits, but also the grower of peaches and other dried fruits, would give the preference in selling their dried fruit products to the above mentioned firms who have shown their willingness to assist this corporation in its endeavor to obtain reasonable prices for the products of the valley and the prosperity of all its citizens who are practically depending on the fair and reasonable prices obtained by the producers of raisins and dried fruits.

### CALIFORNIA ASSOCIATED RAISIN COMPANY,

JAMES MADISON, *Vice-President*.

### CALIFORNIA ALMOND GROWERS' EXCHANGE

GEORGE W. PIERCE, *President* ..... Davis, Cal.  
GEORGE E. LAWRENCE, *Vice-President* ..... Lodi, Cal.  
J. B. WRANGHAM, *Secretary* ..... Fair Oaks, Cal.



**LEGAL MATTERS  
OF INTEREST  
TO THE CANNERS**







## THE SHERMAN ANTI-TRUST LAW

(Following is the Sherman Anti-Trust Law, the basis of all prosecutions of combinations in the United States. The law was approved July 2, 1890, by President Harrison.)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

Sec. 1. Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal. Every person who shall make any such contract, or engage in any such combination or conspiracy, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by a fine not exceeding \$5,000, or by imprisonment not exceeding one year, or by both said punishments in the discretion of the Court.

Sec. 2. Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a misdemeanor, and on conviction thereof, shall be punished by fine not exceeding \$5,000, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the Court.

Sec. 3. Every contract, combination in form of trust or otherwise, or conspiracy, in restraint of trade or commerce in any Territory of the United States, or the District of Columbia, or in restraint of trade or commerce between any such Territory and another, or between any such Territory or Territories and State or States or the District of Columbia, or with foreign nations, or between the District of Columbia and any State or States or foreign nations, is hereby declared illegal. Every person who shall make any such contract or engage in any such combination or conspiracy, shall be deemed guilty of misdemeanor, and on conviction thereof, shall be punished by fine not exceeding \$5,000, or by imprisonment not exceeding one year, or by both said punishments in the discretion of the Court.

Sec. 4. The several Circuit Courts of the United States are hereby invested with jurisdiction to prevent and restrain violations of this act; and it shall be the duty of the several District Attorneys of the United States, in their respective districts, under the direction of the Attorney-General, to institute proceedings in equity to prevent and restrain such violations. Such proceedings may be by way of petition setting forth the case and praying that such violation shall be enjoined or otherwise prohibited. When the parties complained of shall have been duly notified of such petition the Court shall proceed, as soon as may be, to the hearing and determination of the case; and pending such petition and before final decree, the Court may at any time make such temporary restraining order or prohibition as shall be deemed just in the premises.

Sec. 5. Whenever it shall appear to the Court before which any proceeding under Sec. 4 of this act may be pending, that the ends of justice require that other parties should be brought before the Court, the Court may cause them to be summoned, whether they reside in the district in which the Court is held or not; and subpoenas to that end may be served in any district by the marshal thereof.

Sec. 6. Any property owned under any contract or by any combination, or pursuant to any conspiracy (and being the subject thereof) mentioned in Sec. 1 of this act, and being in the course of transportation from one State to another, or to a foreign country, shall be forfeited to the United States, and may be seized and condemned by like proceedings as



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those provided by law for the forfeiture, seizure and condemnation of property imported into the United States contrary to law.

Sec. 7. Any person who shall be injured in his business or property by any other person or corporation by reason of anything forbidden or declared to be unlawful by this act may sue therefore in any Circuit Court of the United States in the district in which the defendant resides or is found, without respect to the amount in controversy, and shall recover threefold the damages by him sustained, and the costs of suit, including a reasonable attorney's fee.

Sec. 8. That the word "person" or "persons" wherever used in this act, shall be deemed to include corporations and associations existing under or authorized by the laws of either the United States, the laws of any of the Territories, the laws of any State, or the laws of any foreign country.

## UNITED STATES PATENT LAW—ITS PROVISIONS AND PRACTICE

By Oscar E. Perrigo, M.E.

From the many questions of clients and the erroneous theories and vague notions of the provisions and practice of the United States Patent Law it is very evident that the average man, even the average inventor, has little practical knowledge of this subject. These facts, and the desire to set forth in brief, plain and simple language, the facts relating to the patent laws of our country and the manner of their practice and application for the benefit of inventors and the general public, are the reasons for the formation of this article.

### UNITED STATES AND FOREIGN PATENT LAWS

As a preliminary statement let it be said that as to brevity, simplicity, fairness, protection and actual value to inventors and to the public, the patent laws of the United States stand before those of any other country. A few facts to prove this are these: In many foreign countries the device patented must be manufactured, or the patent surrendered. Patents are taxed whether there is any income from them or not. A patent may be granted to an inventor, to his friend, or to his enemy, the first who applies gets the consideration of the Patent Office. Practically all fees must be paid with the application, although there are liable to be additional charges at any time during the progress of his case. These are all hard conditions.

In the United States, the inventor, if alive and of sound mind, must sign the application himself and make oath that he verily believes himself to be the inventor. He pays no taxes. He is



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not obliged to manufacture his device, or to have it manufactured. This permits him to make advantageous arrangements and terms for its exploitation. He pays only preliminary fees with his application. If the patent is refused he saves more than one half of the government fees. He knows at the outset just how much the fees are to be. These are all great and practical advantages to the inventors in this country.

### SOME PATENT OFFICE RULES

The following extracts are made from the Patent Office Rules and are of much importance to inventors and others interested in patents.

"All business with the Patent Office should be transacted in writing. Unless by consent of all parties, the action of the Office will be based exclusively upon the written record. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is a disagreement or doubt."

"The personal attendance of applicants at the Patent Office is unnecessary. Their business can be transacted by correspondence."

"When an attorney shall have filed his power of attorney, duly executed, the correspondence will be with him."

"An applicant may prosecute his own case, but he is advised, unless familiar with such matters, to employ a competent attorney, as the value of patents depends largely upon the skilful preparation of the specification and claims. The office cannot aid in the selection of an attorney."

### REGISTERED ATTORNEYS

In former years there was no restriction as to who the applicant selected as his attorney. Much trouble and misunderstanding was the result, and the law was changed so that attorneys were required to present a petition for registration, with proper recommendations satisfactory to the Commissioner of Patents, upon which a Registration Certificate, dated and numbered, was issued. The possession of such a certificate shows that the attorney is, in the judgment of the Patent Office, properly qualified to represent inventors in the prosecution of their applications for patents and to transact all business with the Patent Office.



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### WHO MAY APPLY FOR A PATENT

Now as to the broad scope of the Patent Law. "A patent may be obtained by any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any useful improvement thereof, not known or used by others in this country before his invention or discovery thereof, and not patented in this or any foreign country before his invention or discovery thereof, or more than two years prior to an application for a patent."

It will be noticed that *any* person may apply. This includes males and females, and foreigners of any nationality whatsoever. No distinction whatever is made between the citizens of the United States and foreigners. An invention must not have been patented in a foreign country more than one year, or in public use in this country more than two years prior to an application for a patent.

In case of the death of an inventor his executor or administrator may apply for the patent. If an inventor dies during the consideration of his case by the Patent Office the patent will issue to his legal executor or administrator. In case an inventor becomes insane after making an invention a patent may be applied for by his legally appointed guardian, conservator, or representative.

### SALE AND ASSIGNMENT OF PATENTS

A patent may be sold entire, or any part of it, to one, or to several persons. This may be done before or after its issue by the Patent Office. To make such a sale and transfer an assignment must be made and recorded in the Patent Office in a similar manner to the recording of a deed in the county clerk's office upon the sale of real estate. Where two inventors have worked together on an invention a joint patent is issued to them. Either one or both may assign their interest, or any part of it, to any one or more persons. Either inventor may make such a sale and assignment without the consent of the other.

The receipt of a foreign patent will not prevent the inventor from obtaining a patent in the United States, unless the application on which the foreign patent was granted was filed more than twelve months prior to the filing of the application in this country. But if the year has actually elapsed no patent will be granted in this country.



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### THE APPLICATION FOR A PATENT

The application for a patent is made to the Commissioner of Patents and must be signed by the inventor, if alive and legally able to sign a legal document. The application consists of (1) a petition asking for the grant of a patent, and a power of attorney, if one is employed, as is usually the case. It must be in the English language, and all the papers are now usually typewritten on legal cap paper, the size of which is  $8\frac{1}{2}$  by 13 inches. The petition is signed by the inventor, but need not be witnessed; (2) a specification, in the preamble of which the name, residence, post-office address and nationality of the inventor is given, the title of the invention or improvement, the classification, relation and objects of the invention are recited. This is followed by a concise and accurate description of the construction and use of the device or improvement, referring to the drawings illustrating the device or improvement, after which follow a brief summary called the "claims," which must be very carefully studied out and written by a person with much experience in this particular class of work; (3) the inventor's oath, which is by the present law quite long and complicated, and which must be signed before a notary public, who must impress into the paper an embossing seal; (4) a drawing of one or more sheets, as may be necessary to properly illustrate the invention. This drawing must be very carefully made and conform strictly to a long series of very rigid rules. It must be signed by the inventor or his attorney and witnessed by two persons.

The papers comprising the application are forwarded to the Commissioner of Patents, together with the first government fee, or filing fee of fifteen dollars. Upon their receipt in the Patent Office they are carefully examined as to their legal form and conformity with the rules of the Patent Office. The drawing is examined very rigidly and if not strictly in accordance with the rules it is "returned for correction" which usually means that a new drawing is required. If the application is found correct, a receipt is mailed to the inventor or his attorney, covering the receipt of the papers and the first fee and also giving a serial number and the date of filing, by which the case is afterwards identified.



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### THE EXAMINATION OF THE CASE

*The applications are classified according to the various arts to which they pertain and are taken up for examination in each class in the regular order of filing. The examiner may object to the granting of a patent; (1) that the device presents no patentable features; (2) that it is not novel; (3) that the device is not operative. Under the first condition the examiner will reply stating what parts or claims are patentable and give his reasons for so deciding. Under the second condition he must have found that some previous inventor has discovered or invented a similar device, or parts of it, and he must cite such patents by giving the inventor's name and the number and date of the patents, and say why he thinks the device described by the applicant was anticipated by the patents cited. If he finds the third condition exists he must give his reasons for thinking so. There are, of course, many variations of all three of these conditions, but they may all be included in these three general classes.*

Upon receipt of the examiner's letter it is the duty of the applicant's attorney to carefully consider the objections stated in connection with the representations on the drawing and the statements made in the specification and claims. If prior patents have been cited he must purchase copies of these from the Patent Office and consider them in connection with the terms of the application. He must then formulate his "brief" in answer to the examiner's objections. This will usually consist of an argument tending to show (1) that the examiner is in error; (2) that patents cited do not anticipate the applicant's device in its original form; (3) that the prior patents do not anticipate it in the original form of the claims; (4) that he has so amended the claims as to avoid former patents cited; (5) that notwithstanding the examiner's objections the applicant has invented or discovered a device or a process which does produce a new and useful result, within the meaning of the patent law, and ask for a re-examination of the case.

This brief he files in the Patent Office and the case again takes its turn before the same examiner. He may find other objections and cite other patents, upon the receipt of his letter and the attorney must answer them in a similar manner as described. Thus the case may be examined and re-examined half a dozen times, and often the specifications, the claims and the drawings



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be amended, entailing much labor and study, and often a considerable expense on the part of the attorney. Nearly every application is rejected and references cited when first examined.

The attorney must preserve copies of the drawing, petition, specification, oath, and all other papers sent to the Patent Office, in order that he may be prepared to make accurate references, amendments or additions to them as he may desire, or as may be required by the Patent Office.

### APPEALS FROM THE EXAMINER'S DECISION

In case the examiner persists in rejecting an application or after he has twice rejected it without citing additional references, the applicant may appeal from his decision to the examiners-in-chief. If their decision is against him he may appeal to the Commissioner of Patents, and if he does not think he is getting his rights from his decision he may appeal to the court of Civil Appeals of the District of Columbia. Such appeals entail considerable expense and should be avoided whenever possible to obtain the inventor's rights in any other manner.

When the examiner has decided that a patent should be allowed a legal notice is sent to the attorney informing him of the fact, and granting him a period of six months from the date of such notice for the payment of the final fee of twenty dollars. The patent will be issued about four weeks after the final fee has been received by the Patent Office.

The foregoing information has been given in as brief a form as possible and is compiled from the Rules of Practice of the United States Patent Office, a book of 125 pages. From what has been said it will be readily inferred that while the patent law has been simplified until it is the best that we know of for the protection of both inventor and the public, it is still quite complicated and that to successfully handle cases before the Patent Office requires much skill, judgment and experience, and while "any attorney can get *some kind of a patent* on almost *any kind of a device*," the patents which are easy to get usually have but little value to the inventor or to anyone else. The really valuable patents are those wherein the application has been prepared and the prosecution of the case before the Patent Office has been conducted with much care and experience and ample time given to the consideration of every point involved, even though it appears to be of only minor importance.



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### PATENT OFFICE FEES

Fees are as follows, advance payment being required: On filing original application for patent, \$15; on issuing each original patent, \$20. In design cases: For three years and six months, \$10; for seven years, \$15; for fourteen years, \$30; on every application for reissue, \$30; on filing each disclaimer, \$10; on an appeal for the first time from the primary examiners to the examiners-in-chief, \$10; on every appeal from the examiners-in-chief to the Commissioner, \$20; for certified copies of patents and other papers, including certified printed copies, 10 cents per 100 words; for recording every assignment, power of attorney, or other paper, of 300 words or under \$1; of over 300 and under 1,000 words, \$2; and for each additional 1,000 words or fraction thereof, \$1; certified copies of such drawings and specifications may be furnished by the Commissioner of Patents to persons applying therefor upon payment of the present rates for uncertified copies, and 25 cents additional for each certification; for copies of drawings, the reasonable cost of making them.

### WEIGHT OR MEASURE BRANDING LAWS

In order that the members of the Association may be advised with reference to compulsory weight or measure branding laws which have been enacted, so far as the same apply to canned foods, and the dates when the same become effective, we append the following summary:

#### NATIONAL

The amendment of March 3, 1913, to the food and drugs act of June 30, 1906, provides that food in package form must be labeled to show the quantity of contents in terms of weight, measure or numerical count. The regulations for the enforcement of this amendment are now being formulated.

This law does not apply to domestic products prepared or foreign products imported prior to September 3, 1914.

#### CALIFORNIA

The Act of 1913, chap. 167, provides that all food products sold in a container must be labeled to show the weight, measure or numerical count of contents. The law defines a container to be the receptacle in which the commodity is packed for sale or exposed for sale. Designation shall be in weight, measure or count, as is most feasible according to the character of the product, and if by weight must be in terms of pounds, ounces or fractions avoirdupois; if by liquid measure, in terms of gallons, quarts, pints or fractions thereof; and if by solid measure, in terms of bushels, pecks, quarts or fractions thereof; if by count, shall be expressed in English words of Arabic numerals. In stating



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the contents, one of the following phrases shall appear: "Net Contents," "Net Weight," "Net Measure," or "Net Count." Unavoidable discrepancies are not to be held a violation of the act, nor is it a violation, if there is a discrepancy, provided the seller of the article purchased the container in good faith, relying upon the statement of the contents in the container; provided, further, that the name of the packer, manufacturer, wholesaler or jobber appears upon the container.

This law takes effect April 1, 1914.

### CONNECTICUT

The Connecticut law now in effect requires all food products in package form, except confectionery and shelled nuts, sold for ten cents or less, to be labeled to show the weight, measure or numerical count, with allowance for reasonable variations, under rules and regulations made from time to time by the dairy and food commissioner and the director of the Connecticut Experiment Station.

This law is now in effect, and by a ruling of the courts the term "package" has been construed to cover such things as cases of bottles. Therefore, under the Connecticut law, canned foods designated for sale in that state should be marked or stenciled in a way to show the net contents of the cans enclosed.

### FLORIDA

Under the law now in effect it is necessary to state the weight, measure or numerical count of contents on all food products sold in package form. Reasonable variations are permitted. The regulations provide that the net weight shall be stated in pounds or ounces, avoirdupois, and that the net measure shall be stated in U. S. standard gallons, quarts or fluid ounces. Packages containing more than a pound shall state the weight in pounds and ounces; weights less than a pound shall be stated in ounces. It is not permissible to state a pound or more in ounces, or one quart or more in fluid ounces.

### IOWA

The act taking effect September 3, 1914, requires that food products in package form shall be labeled to show the weight, measure or numerical count of contents. Reasonable variations are permitted.



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### MAINE

Under the Maine law canned foods must be labeled to show the quantity of contents in terms of weight, measure or numerical count. Reasonable variations are permitted. The law does not apply to articles purchased prior to January 1, 1914.

### MICHIGAN

Food products in package form are required to bear upon the principal label a statement of the true net weight in terms of pounds, ounces and grains avoirdupois, or true net measure, in terms of gallons of 231 cubic inches, or fractions thereof, and quarts, pints and gills, or true numerical count. Reasonable variations are permitted. Goods received by wholesalers or retailers on or before January 1, 1914, are exempt until September 1, 1914.

### MONTANA

All commodities, including food products in package or container, when sold or offered for sale, must be labeled with a correct statement of the weight, measure or numerical count. In determining whether or not the correct weight is stated, the usual leakage, evaporation or waste shall be taken into consideration. A variation of 3 per cent from the stated weight is allowed, provided the variation is as often above as below the weight stated.

These provisions take effect January 1, 1914.

### NEBRASKA

Beginning March 4, 1914, all food products in package form must be labeled to show the weight, measure or numerical count of the contents. At present, the weight, measure or numerical count must be stated upon a number of articles, including dried fruits. Reasonable variations are permitted, with the same proviso as in the Montana law. Packages put up by the retailer and packages in the hands of the retailer at the time the act takes effect, April 14, 1913, are expressly exempted by statute.

### NEVADA

All commodities in package form, including food products, must be labeled with the weight, measure or numerical count of



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the contents. A slight variation is permissible, when the same is as often above as below the weight stated, and the ordinary evaporation, leakage or waste shall be considered in determining whether or not the statement of weight is true.

This law is now in effect.

### **NEW HAMPSHIRE**

The act taking effect November 22, 1914, requires all food products in package form to be labeled to show the weight, measure or numerical count of contents. Reasonable variations are permitted.

### **NEW YORK**

All commodities sold in containers must be labeled to show the weight, measure or numerical count. Reasonable variations are permitted. The size of type to be used in marking the weight is prescribed by regulation, as follows: In type at least 1/9 inch in height where the weight of contents is in 1/4 lb., 1/2 lb., or multiples of 1/2 lb.; otherwise in type at least 3/16 of an inch in height. The statute does not apply to commodities packed prior to February 1, 1914.

### **NORTH DAKOTA**

All food products in packages must be labeled with the weight. Reasonable variations are permitted.

The law is now in effect.

### **OREGON**

Food products in package form must be labeled to show the weight, measure or numerical count. Variations are permitted. The statute takes effect July 1, 1914.

### **PENNSYLVANIA**

The law approved by the governor about July 24, 1913, provides that every commodity or article of food packed in containers of any description shall bear a plainly legible statement of the net weight, measure or numerical count of the contents or of the net volume thereof, and the name and address of the



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manufacturer, producer or distributor. Reasonable variations to be established by the Chief of the Bureau of Standards are permitted.

The act becomes effective eighteen months after its approval.

### SOUTH DAKOTA

The law now in effect provides that all food products sold in package form, bottle or container must be labeled to show the weight, measure or numerical count. Variations are permitted.

### UTAH

All food product in packages must be labeled with the weight, measure or numerical count. Reasonable variations are permitted. This law was passed in 1913, to take immediate effect. Time is being allowed to dispose of goods on hand, but no announcement has been made as to the limit of such permission. All goods shipped into this state should be immediately labeled in order to comply with the statute, and goods on hand should be disposed of as rapidly as possible.

### WISCONSIN

Foods in package form must be labeled to show the weight, measure or numerical count. Reasonable variations are permitted. This act takes effect September 3, 1914.

### WYOMING

Food products in package form must be labeled with the weight, measure or numerical count. Reasonable variations are permitted. The act is now in effect.

## FOOD LAW ENFORCEMENT

Dr. Carl L. Alsberg, of the Bureau of Chemistry, Department of Agriculture, has prepared and made public here a statement of the general situation under the Food and Drugs Act, in which he says:

The presence of the words "Guaranteed Under the Food and Drugs Act" now used on the labels of food and drug products has undoubtedly misled many consumers into buying defective foods and has hindered rather than helped the Federal Govern-



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ment in its efforts to prevent the shipment of adulterated or misbranded articles, or food products containing material filthy, putrid, or otherwise unfit for human consumption.

Many individual consumers have a totally erroneous conception of the significance of these words on the label. The words "Guaranteed Under the Food and Drugs Act" are taken to mean that the manufacturer has filed with the Department of Agriculture an analysis of his product and that the department has checked up this analysis and found it to be correct, and finally that the Government specialists have decided that the article is properly manufactured, contains the proper ingredients and is altogether desirable as a food or drug. The truth is that the Government has never scrutinized from this point of view many products which bear this label. It stands to reason that the Government could not have analyzed each particular can bearing these words. Nor could the Government undertake to make successful analysis of each and every batch or run of a particular product made in every factory. This would mean that it would have to maintain an inspector on duty all the time in every concern which manufactures foods or drugs.

### LABEL NOT OBLIGATORY

The Food and Drugs Act does not require the manufacturer to use the words "Guaranteed Under the Food and Drugs Act" or to print his serial number on his label. Several very large manufacturers and shippers of food products do not use the words "Guaranteed Under the Food and Drugs Act" on their labels.

On the other hand, the fact that so many manufacturers of foods, although they are not required to print the guarantee legend, are anxious to do it, is proof enough that they believe that there is some advantage to themselves in using it.

As long as the label does not misbrand the article and states the presence of substances like morphine, acetanilid, or certain preservatives on the label, the goods are free to enter interstate commerce without the words "Guaranteed Under the Food and Drugs Act" and without the presence of a serial number.

The words "Guaranteed Under the Food and Drugs Act" are really a guarantee of the manufacturer to relieve the cus-



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tomor of responsibility should the goods be proceeded against by the Government. Manufacturers who do not use the word "guaranteed" on the actual label of their products then protect their customers, the jobbers and retailers by putting such a guarantee on the bill of lading of the interstate shipment.

In other words, the guaranty is not made to the Government, but is the same sort of guaranty that a hat store might make to the purchaser of a hat. If the hat was not as represented the guaranty would give the customer a chance to enter a civil suit to recover his money. Similarly, the guaranty legend put by manufacturers on their labels helps the customer to recover his money by civil process in the event that the Government should seize such goods while in his possession.

### STATE LINES RESPECTED

Moreover, under the Food and Drugs Act the Federal inspectors have power only to suggest seizures or other prosecution on goods after they have actually entered into interstate commerce. A manufacturer who makes goods in a certain state and sells them solely within the boundaries of that state cannot be prosecuted under the Food and Drugs Act. Again, while the Government might be able to seize so much of the manufacturer's product as entered interstate shipment, it could not touch the remainder of the same product which was made and sold wholly within state lines. Frequently manufacturers brand their whole run of goods with the same label containing the words "Guaranteed Under the Food and Drugs Act," but so long as the product remains within the state lines where actually made the Government cannot seize it. The best that the Government authorities can do in such a case is to bring the misbranded, adulterated or filthy condition of the product to the attention of the state food officials, who alone have jurisdiction over purely domestic state commerce.

### ACTIVE ANALYSIS WORK

Over all food and drug products which enter into interstate commerce the United States Department of Agriculture maintains an active and vigorous supervision. From time to time samples of products bearing labels fully complying with the Food and Drugs Act, as far as their form is concerned, are taken



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and analyzed. The Government itself does not regard the presence of the words "Guaranteed Under the Food and Drugs Act" as being in any way proof that the product is all that it should be. The Department of Agriculture, therefore, frequently takes samples of labeled products and if it finds evidence of misbranding, adulteration or other conditions contrary to the law, recommends that the Department of Justice seize the product or prosecute the manufacturer. Similarly, in the cases of carloads of bulk shipments which bear no definite label but which are shipped into interstate commerce, the department takes samples and if it finds that the bulk of the product does not comply with the regulations and enforcement of the Food and Drugs Act, proceeds against the actual shipper or manufacturer just as strenuously as if the carload had a printed label and serial number. In other words, the use by the manufacturer of the words "Guaranteed Under the Food and Drugs Act" does not make it possible for the Government to secure a heavier penalty than if the product did not bear this misleading legend.

To sum up, the words "Guaranteed Under the Food and Drugs Act" do mislead the consumer into the belief that the Government guarantees the product to be all right. In the second place, these words in no way enable the Federal authorities to secure a heavier penalty for misbranding, adulteration or sophistication. The part of the label that is most useful to the Government is the serial number, which enables it to trace the product back to its legal manufacturer and bring action against him in his place of legal residence. This is particularly convenient in the case of corporations organized under state law.

### LABELING OF CANNED FOODS

Next in importance to the actual packing of the foods comes the proper labeling of the package. Though the law has been fully complied with in the packing, it may still be violated in the branding. It is, therefore, pertinent to inquire what are the requisites of a legal label. These need not be many, although profuse statements are not forbidden, provided, always, they are *true*. In fact, truth in making the statements appearing on the label is the prime requisite, and failing that, all else fails with it.



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The Government regulations on the subject are as follows:

### MISBRANDING

#### Regulation 17. Label.

(As amended by F.I.D. 84, January 31, 1908, taking effect February 10, 1908.)

#### (Section 8.)

(a) The term "label" applies to any printed, pictorial or other matter upon or attached to any package of a food or drug product, or any container thereof subject to the provisions of this act.

(b) The principal label shall consist, first, of all information which the Food and Drugs Act, June 30, 1906, specifically requires, to wit, the name of the place of manufacture in the case of food compounds or mixtures sold under a distinctive name; statements which show that the articles are compounds, mixtures, or blends; the words "compound," "mixture," or "blend," and words designating substances or their derivatives and proportions required to be named in the case of food and drugs. All this information shall appear upon the principal label and should have no intervening descriptive or explanatory reading matter. Second, if the name of the manufacturer and place of manufacture are given, they should also appear upon the principal label. Third, preferably upon the principal label, in conjunction with the name of the substance, such phrases as "artificially colored," "colored with sulphate of copper," or any other such descriptive phrases necessary to be announced, should be conspicuously displayed. Fourth, elsewhere upon the principal label other matter may appear in the discretion of the manufacturer. If the contents are stated in terms of weight or measure, such statement should appear upon the principal label and must be couched in plain terms, as required by Regulation 29.

(c) If the principal label is in a foreign language, all information required by law and such other information as indicated above in (b) shall appear upon it in English. Besides the principal label in the language of the country of production, there may be also one or more other labels, if desired, in other languages, but none of them more prominent than the principal label, and these other labels must bear the information required by law, but not necessarily in English. The size of the type used to declare the information required by the act shall not be smaller than 8-point (brevier) capitals: Provided, that in case the size of the package will not permit the use of 8-point type, the size of the type may be reduced proportionately.

(d) Descriptive matter upon the label shall be free from any statement, design, or device regarding the article or the ingredients or substances contained therein, or quality thereof, or place of origin, which is false or misleading in any particular. The term "design" or "device" applies to pictorial matter of every description, and to abbreviations, characters or signs for weights, measures, or names of substances.

(e) An article containing more than one food product or active medicinal agent is misbranded if named after a single constituent.

In the case of drugs the nomenclature employed by the United States Pharmacopocia and the National Formulary shall obtain.

(f) The use of any false or misleading statement, design, or device appearing on any part of the label shall not be justified by



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any statement given as the opinion of an expert or other person, nor by any descriptive matter explaining the use of the false or misleading statement given as the opinion of an expert or other person, nor by any descriptive matter explaining the use of the false or misleading statement, design or device.

### Regulation 18. Name and Address of Manufacturer.

#### (Section 8.)

(a) The name of the manufacturer or producer, or the place where manufactured, except in case of mixtures and compounds having a distinctive name, need not be given upon the label, but, if given, must be the true name and the true place. The words "packed for.....," "distributed by .....,," or some equivalent phrase shall be added to the label in case the name which appears upon the label is not that of the actual manufacturer or producer, or the name of the place not the actual place of manufacture or production.

(b) When a person, firm, or corporation actually manufactures or produces an article of food or drug in two or more places, the actual place of manufacture or production of each particular package need not be stated on the label except when in the opinion of the Secretary of Agriculture the mention of any such place, to the exclusion of the others, misleads the public.

### Regulation 29. Statement of Weight or Measure.

#### (Section 8. Third under "Foods.")

(a) A statement of the weight or measure of the food contained in a package is not required. If any such statement is printed, it shall be a plain and correct statement of the average net weight or volume, either on or immediately above or below the principal label, and of the size of letters specified in Regulation 17.

(b) A reasonable variation from the stated weight for individual packages is permissible, provided this variation is as often above as below the weight or volume stated. This variation shall be determined by the inspector from the changes in the humidity of the atmosphere, from the exposure of the package to evaporation or to absorption of water, and the reasonable variations which attend the filling and weighing or measuring of a package.

Considering the above regulations as applied to the labeling of canned foods, it is first to be noticed that the regulations require certain statements to appear upon what is termed the "Principal Label." The *principal label* is regarded by those in authority as not the *whole* label, but only that portion which is intended for display purposes, and which should bear the information required by Regulation No. 17 printed above.

By the courtesy of the Board of Food and Drug Inspection of the Department of Agriculture, we are permitted to publish the following letter on the subject of the principal label:



THE MAX AMS MACHINE CO.

UNITED STATES DEPARTMENT OF AGRICULTURE

BOARD OF FOOD AND DRUG INSPECTION,

WASHINGTON, D.C.

September 6, 1912.

Mr. Frank E. Gorrell,  
Secretary, National Cannery Association,  
Bel Air, Md.

Dear Sir:

I beg to acknowledge the receipt of your communication of August 13, 1912, in which the question of the principal label is discussed and certain information requested by you. The main question which is presented is what is regarded as the principal label on cans cylindrical in shape.

Regulation 17 of the rules and regulations promulgated by the three secretaries provides, in part, that all the information which the Food and Drugs Act specifically requires shall be contained on the principal label. In requiring that certain information should appear on the labels of articles of foods and drugs, Congress considered that the purchaser was entitled to this information. It considered this information was important and consequently such information should appear on the label in a place where it will be conspicuous and attract the attention of the purchaser.

The paper bearing the statements which constitute the label or labels on cans cylindrical in shape is in some cases arranged in parts, each part bearing statements or devices which are separate and independent from the statements or devices appearing on the other parts. In nearly every instance some one of the parts is displayed so as to stand out more prominently than the others. In a case of this kind it is my opinion that that portion of the paper around the can which is made the more conspicuous, either by the statements or devices which appear thereon, is to be regarded as the principal label within the meaning of Regulation 17.

Regarding the term "principal label," where a strip label on a cylindrical can is so divided as to form two prominent labels each bearing the name of the product prominently displayed so that either face may be used upon the shelves of the grocer, any statement required by law or necessary for the full description of the product should be plainly made upon each of these labels and in conjunction with the name of the substance. Of course what is to be regarded as the principal label must depend upon the facts in each particular case.

Respectfully,  
(Signed) R. E. DOOLITTLE,  
Acting Chairman.

It, therefore, becomes important to inquire what information is required by the above regulations to appear on the principal label. It is the following:

1. The name of substance or product.
2. Brand name (if given).
3. Words which indicate that the articles are compounds, mixtures or blends and the word "imitation," "compound," or "blend," as the case may be.



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4. Name of the manufacturer (if given).
5. Place of manufacture (if given), or when required in case of food mixtures or compounds bearing a distinctive name.
6. Weight of contents (if given).
7. Name of ingredient (where used).

It is well to note in connection with each of the above points the following:

1. **NAME OF SUBSTANCE OR PRODUCT.** Such name should be the true name of the contents of the package, as commonly understood in English. (See notice of Judgment No. 163.)

2. **BRAND NAME.** The requirements with reference to the brand are as follows:

(a) A simple or unmixed food (or drug) product not bearing a distinctive name should be designated by its common name in the English language.

(b) The use of geographical names shall not be permitted in connection with a food (or drug) product not manufactured or produced in that place, when such name indicates that the article was manufactured or produced in that place.

(c) The use of a geographical name in connection with a food (or drug) product will not be deemed a misbranding when by reason of long usage it has come to represent a generic term and is used to indicate a style, type or brand; but in all such cases the State or Territory where any such article is manufactured or produced shall be stated upon the principal label.

(d) A foreign name which is recognized as distinctive of a product of a foreign country, shall not be used upon any article of domestic origin, except as an indication of the type or style of quality or manufacture, and then only when so qualified that it cannot be offered for sale under the name of a foreign article. (See Regulation 19, also F.I.D. No. 115.)

3. **WORDS WHICH INDICATE THAT THE ARTICLES ARE COMPOUNDS, ETC., ETC.** It is not deemed necessary to treat this division of the subject, because of its remote relation to the packing of canned foods.

4. **NAME OF MANUFACTURER** (if given), and

5. **PLACE OF MANUFACTURE** (if given), etc., etc. If the name of the manufacturer and the place of manufacture be given they must be the true name and the true place. The law



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permits that the name of the person, firm or corporation for whom the foods are manufactured or packed, or by whom they are distributed, may be given if preceded by the words "Prepared for," "Manufactured for," "Distributed by," etc. The phrase "sold by" is not satisfactory. The approved phrase shall be set in type not smaller than 8-point (brevier) capitals. (See F. I. D. No. 68.)

6. WEIGHT OF CONTENTS. The law requires that the weight of contents (if given) should appear either on or immediately above or below the principal label, and be printed in type not smaller than 8-point (brevier) capitals. (See Regulation 29.)

The statement of the weight or measure contained in a package is not at present required, but an amendment to require the same was before Congress at its recent session and was passed by the House of Representatives and remains on the calendar for passage at the session of Congress which will convene on the first Monday of December next. As at present proposed this amendment will become effective upon its passage, but no penalties shall be enforced for any violation of its provisions as to domestic products prepared or foreign products imported prior to twelve months after its passage. (This subject was fully covered by Bulletin No. 2 issued by the Association on June 12, 1912.)

A number of different States now require a statement of weight or measure to appear on the label and some of these require that it be used in pounds and ounces (that is, for example, 1 lb. 4 oz. and not 20 oz.).

7. NAME OF INGREDIENTS. Any statement with reference to the ingredients used should appear on the principal label accompanying the name of the product, without intervening descriptive or explanatory matter, and be printed in type not smaller than 8-point (brevier) capitals. For instance, in the preparation of succotash, if *soaked* beans and *soaked* corn are employed, the same should be accompanied by a declaration of that fact in the manner mentioned above. (See F.I.D. No. 71.)

REQUIREMENTS AS TO SIZE OF TYPE. It will be noted that certain of the matters which the law compels to appear on the principal label are to be printed in type not smaller than 8-point



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(brevier) capitals. For the guidance of packers and label printers a sample of that type is here shown.

WEIGHT OF CONTENTS 2 POUNDS 6 OUNCES.

WEIGHT OF CONTENTS 16 OUNCES.

PREPARED FROM GREEN SWEET CORN AND  
SOAKED LIMA BEANS.

PACKED BY JOHN DOE, DOESVILLE, VA.

DISTRIBUTED BY RICHARD ROE, ROESVILLE, MINN.

Passing now from the consideration of the "principal label," it is to be noted that the Government takes cognizance not only of the statements on the label, but of any design or device appearing *on any part of the label*. These are permitted so long as they are not false or misleading, but care should be exercised to see that they conform clearly and completely to the truth in every aspect. (See F. I. D. No. 113.)

The same is true of any descriptive matter appearing on the label—it must be wholly true and without extravagance or exaggeration. Bear in mind that the law forbids all forms of misrepresentation, and it is not sufficient that a deceptive statement, design or device should be allowed to remain on one portion of the label with a corrective statement upon another portion of the label. (F. I. D. No. 113, also F. I. D. No. 68.)

In this connection, it should be noted that all substances when named upon the label should be given the distinctive name by which they are known in the trade. For instance, where soaked beans or corn are used for any purpose, the adjective "soaked" should be used in defining such product and not the word "dried." (Opinion on request to Board of Food and Drug Inspection.)

**GUARANTY:** The Government permits and has provided a general guaranty. The packer may file his general guaranty with the Secretary of Agriculture and have issued to him a serial number and so become entitled to use the serial number guaranty. When such guaranty is used the serial number should appear in connection with and preferably before the guaranty legend, which legend should read as follows: "Guaranteed by (here insert name of guarantor) under the Food and Drugs Act, June 30, 1906." (See F. I. D. Nos. 20 and 99, also opinion on request to Board of Food and Drug Inspection, also F.I.D. No. 72.)



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Regulation 18 provides that if the name of the manufacturer and the place of manufacture be given, they must be the true name and the true place. It would appear, therefore, that the use of a fictitious name in such a manner that it would be understood to be the name of the manufacturer would be clearly a violation of Regulation 18. It is apparent that the provisions of Regulation 18 will not be fulfilled by the nominal incorporation of a fictitious firm. The regulations require that the foods must be actually manufactured by the firm represented on the label as the manufacturer. This is the construction put upon Regulation 18 by the Board of Food and Drug Inspection. (See F.I.D. No. 46.)

Summing up the foregoing it is plain that the whole spirit and intent of the law and the regulations for its enforcement are to require and compel the label to speak nothing but what is absolutely true and to convey no impression that may be false or misleading, and to require that the several matters mentioned in said regulations shall be arranged in the position and printed with the size of type set forth in said regulations in order that they may plainly and conspicuously appear.

It is suggested that in ordering labels the above Act be taken into account and the labels bear a statement of the weight of contents of the can, and that the weight be expressed in pounds and ounces, viz: 1 lb., 4 ozs. instead of 20 ozs. and that the type used be of the size required by existing regulations, namely, 8-point (brevier) capitals.

It should also be borne in mind that the statement of weight should appear plainly and conspicuously upon the "principal label," as required by the regulations now in force. For a full statement on this point reference is here made to Bulletin No. 7 of this Association issued September 17th, 1912.

### STENCILING CASES To Show Weight of Contents.

Under Regulation No. 2, promulgated for the enforcement of the Food and Drugs Act of June 30, 1906, it is provided:

"The term 'original unbroken package,' as used in this Act, is the original package, carton, case, can, box, barrel, bottle, phial or other receptacle put up by the manufacturer, to which the label is attached, or which may be suitable for the attachment of a label, making one complete package of the food or drug article. The original package contemplated includes both the wholesale and the retail package."



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### GUARANTIES

Repeated requests have been received by the Association for information regarding the proper form of guaranty between food producers and their customers. Since the enactment of the Gould Weight Bill by Congress nearly all distributors have been requiring a new form of guaranty, and the National Wholesale Grocers' Association has recently issued a form of guaranty which has been the subject of considerable discussion among canners. This matter is such an important one that our Association has asked its attorneys to prepare forms of guaranty for general use by canners, and in response to that request they have submitted the following general and special forms:

#### GENERAL FORM

I (we) the undersigned do hereby guarantee that the articles of food manufactured, packed, distributed or sold by me (us), namely ..... are not adulterated or misbranded within the meaning of the Act of Congress known as the Food and Drugs Act, June 30, 1906, and the amendments thereof now in force, and within the meaning of the laws of the State of..... where said goods are produced; but this guaranty does not include the misbranding of goods sold under buyer's labels.

.....  
.....  
Dated at .....  
this.....day of.....191 .

It will be seen that these guaranties are practically in the form suggested by Regulation No. 9, promulgated by the three Secretaries under the National Pure Food and Drugs Law of June 30, 1906, with the necessary addition to include compliance with the laws of the State where the goods are produced, and to exclude a guaranty against misbranding where goods are sold under buyer's labels.

#### SPECIAL FORM

I (we) the undersigned do hereby guarantee that the goods this day sold by me (us) to.....(here insert name of buyer) namely.....(here insert description of goods) are not adulterated or misbranded within the meaning of the Act of Congress known as the Food and Drugs Act, June 30, 1906, and the amendments thereof now in force, and within the meaning of the laws of the State of....., where said goods are produced; but this guaranty does not include the misbranding of goods sold under buyer's labels.

.....  
.....  
Dated at .....  
this.....day of.....191 .



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Guaranty put out by the Grocers' Association is a very broad one, and requires compliance with the National law and the laws of each of the States of the Union. It would not seem the part of wisdom for packers to guarantee their goods to comply with the food laws of all the States in force at the time of sale. The packer is willing to guarantee that his goods are not adulterated or misbranded within the meaning of the National Pure Food and Drugs Act and its amendments, and within the meaning of the laws of his own State or the State where the goods are produced, but he should not be required to go further than this. The packer has no control over the goods after they leave his possession; he cannot know into what State they may ultimately find their way, nor to what conditions they may be subjected in the hands of subsequent purchasers. When, therefore, he is asked to sign this very broad guaranty he assumes an unwarranted risk and one which is against all good business judgment.

If the buyer wishes the goods to conform to the laws of the particular State in which he resides, he (the buyer) should see that the goods conform to that law, and not require of the packer a guaranty in respect of laws with which he is not familiar or against conditions altogether unknown to the packer and over which he has absolutely no control. There may be cases, of course, when it will be to the manifest advantage of individual packers to accept a contract as a part of which a guaranty against the infraction of the laws of particular States may be required. This is a matter which, if circumstances justify it, can be arranged to meet the particular case, but in the absence of some such controlling circumstances, the packer should refuse to sign a guaranty as sweeping in its terms as that proposed by the Grocers' Association; and in no case should the buyer require the packer to guarantee the legality of the buyer's own label. This is manifestly unreasonable and too great a risk to be assumed by the packer, no matter what the inducement.

Before signing any contract differing from the one herein given the packer should be thoroughly informed regarding the terms of the guaranty and the laws with which he is expected to comply.

For the purpose of finally determining this question and reaching a working basis between the packers and jobbers, the question of a proper form of guaranty has been referred to the



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conference committees of the two Associations. Until these committees complete their work and agree upon a guaranty, the forms given herein are suggestive, and those forms have had the approval of our attorneys, accompanied by an opinion, the substance of which is stated above.

### SALE, DELIVERY AND ACCEPTANCE OF CANNED FOODS

A case of interest to packers was recently tried in the Supreme Court of the District of Columbia, before Judge Claibough and a jury. This suit was brought by the Belcamp Packing Company of Harford County, Maryland, against B. B. Earnshaw, of Washington City, trading as B. B. Earnshaw & Brother.

The facts in the case are these: In June 1911, Earnshaw, a wholesale grocer, purchased from the Belcamp Packing Company, through H. P. Strasbaugh & Co., as brokers, 825 cases No. 2 Country Gentlemen corn of the pack of 1911, at 75c per dozen F. O. B. Baltimore and Ohio Railroad at Belcamp Station, during the packing season of that year. Shipment was made in September 1911, as required by the contract. Upon the arrival of the goods the consignee, after starting to unload the car, claims to have cut two cans that were about an inch slack filled, and thereupon notified the brokers that owing to slack filling the delivery was not a good one and would not be accepted, but that he would unload the balance of the car and put the goods in his warehouse. Upon receipt of this notice the manager of the Belcamp Packing Company went to see the purchaser of the goods and weighed 12 or 14 cans taken out of that many cases, and, in the presence of the buyer, opened three of the lightest cans.

It was the testimony at the trial that the cans so cut were filled to within one-half inch of the top. The buyer had the goods examined by the Inspector of Weights and Measures for the City of Washington, and the inspector testified that he had opened twelve cans taken out of that many cases and found that six were slack filled three-quarters of an inch below the top, and six of them slack filled one-half inch. With reference to the testimony of the inspector, the Court ruled that his evidence



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had only the weight of any other witness who had made an examination of the goods about which he testified, although the defendant claimed that in view of the report of the inspector he was entitled to reject the goods and refuse to pay for them.

A number of witnesses familiar with the packing of corn were called on the part of the plaintiff and testified with reference to the method of canning corn, and that proper packing required three-eighths to three-quarters of an inch head space, varying somewhat according to the actual conditions; in other words, that a can which was three-quarters of an inch slack filled was properly filled, because proper processing and sealing require a minimum air space of from one-half to three-quarters of an inch, and that by the time the can came to be opened the natural cooling and settling of the contents of the can would somewhat enlarge this space.

With reference to the right on the part of the buyer to inspect the goods, the Court ruled that by the contract the place of delivery was fixed at Belcamp Station, on the Baltimore and Ohio Railroad in Harford County, and that had the packer notified the buyer of the date of shipment, the buyer would then have been required to inspect the goods at Belcamp Station, and if he did not regard the notice and so inspect the goods, he could not thereafter reject them for causes appearing upon an inspection at their destination. This of course is a reaffirmance of well settled principles of law on that subject, but it may serve as a guide to packers not already familiar with the operation of the law.

The case was submitted to the jury on instructions presenting the views of both parties, as to whether or not the cans were properly filled, that being the sole question before the jury, and the jury rendered their verdict in favor of the packer for the full amount of his claim. A motion for new trial filed by the defendant has been overruled by Judge Clabaugh.

## **OWNER OF ADULTERATED FOOD IS LIABLE IF HE SHIPS TO HIMSELF IN ANOTHER STATE**

The United States Circuit Court of Appeals has decided an important question concerning the enforcement of the Federal Food and Drugs Act. The Philadelphia Pickling Co. was the



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defendant in a prosecution for shipping nine barrels of bad tomato paste from Belleplain, N.J., where it has a factory, to itself in Philadelphia. The pickling company did not deny that the stuff was bad, but took refuge behind the contention that there was no interstate shipment within the meaning of the law, because the owner, which was the Philadelphia Pickling Co., did not ship to another person in another State, but shipped it to itself.

The District Court decided against this contention in the following language:—

The shipment here is said to have been made from the owner to himself, the shipper and the consignee being the same person, and that from that we are to conclude that it was not commerce. I do not think the cases cited by counsel will support that insistence. Furthermore, it must not be overlooked that all those cases were dealing with Section 10, seizures in which the element of sale is expressly inserted. It may very well be that a person cannot sell to himself; yet a shipment by one to himself may be in contemplation of sale and fall within the statute's inhibition. If Stevens, the original owner, had shipped these goods direct to the defendant at Philadelphia, there would be no question but that it would be a shipment in interstate commerce. Will the mere fact that the purchase was made in New Jersey and shipped by the purchaser to himself in another State take the transaction out of the act? To put such construction upon this section seems to be violative of the ordinarily accepted principles of statutory construction.

The Philadelphia concern, when it lost in the court below, appealed to the United States Circuit Court of Appeals, which affirmed the judgment of the lower court in the following opinion:—

In our opinion it was interstate commerce for the owner to ship the goods from New Jersey to Pennsylvania for a business purpose such as examination and test; and as the goods were adulterated such a shipment was unlawful.

The judgment is affirmed.

This may be taken as finally settling it as a fact that if the owner of adulterated or misbranded foods ships them to himself in another State, it is an interstate shipment within the meaning of the Federal Food and Drug law, and he will be liable to the regular penalties of the act.

The above report of the case is taken from the *Grocery World*, of Philadelphia, of August 18th, and will be found interesting as solving a possible difficulty over shipping goods from one factory to another in different States.



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### A WORD TO FRUIT PACKERS

A recent decision of the United States Court of Chicago is of interest to canners of fruit. In that case the Government alleged and the Court decided that the oranges in question were colored in a manner whereby inferiority, due to the immaturity of the fruit, was concealed. The oranges were shown to have been shipped green and colored by the Sweating process, which consists of putting the green fruit in a tightly closed room in which there is also placed one or more kerosene stoves which burn with a blue colorless flame. A vessel of water is also placed on the stove to insure a high humidity in the atmosphere. It was alleged by the claimants of the fruit and not disputed by the Government that this process hastened the development of the yellow which would have taken place more slowly under natural conditions of shipment. The Court held in the case that the fruit was artificially colored, in that the yellow coloring matter originally in the peeling concealed by the green coloring matter, was brought out by the destruction of the green, although the process causing that destruction was not accompanied with the addition of an external agent, and that fruit so ripened was inferior to that ripened under natural conditions.

The decision was made upon the general grounds that the consumer was deceived by the appearance of the fruit and an imposition was practiced upon him in offering an article of inferior quality, that quality being concealed by the appearance of ripeness artificially produced.

This case is cited for whatever bearing it may have upon the canning of fruits and their labeling.

*AN ACT. To amend section eight of an Act entitled "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors and for regulating traffic therein, and for other purposes," approved June thirtieth, nineteen hundred and six.*

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

*That section eight of an Act entitled "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines*



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*and liquors, and for regulating traffic therein, and for other purposes," approved June thirtieth, nineteen hundred and six, be, and the same is hereby, amended by striking out the words "Third. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package," and inserting in lieu thereof the following:*

*"Third. If in package form, the quantity of the contents be not plainly and conspicuously marked on the outside of the package in terms of weight, measure, or numerical count: Provided, however, That reasonable variations shall be permitted, and tolerances and also exemptions as to small packages shall be established by rules and regulations made in accordance with the provisions of section 3 of this Act.*

*Sec. 2. This Act shall take effect and be in force from and after its passage: Provided, however, That no penalty of fine, imprisonment or confiscation shall be enforced for any violation of its provisions as to domestic products produced or foreign products imported prior to eighteen months after its passage.*

The above Act has been passed by Congress and approved by the President and is now a part of the Food and Drugs Act of June 30th, 1906.

It will be seen that its effect is to require a statement of the quantity of the contents of a food package in terms of weight, measure or numerical count, and unless the package or the label thereon bears such statement the product will be deemed to be misbranded for the purposes of the Act.

It will be noted also that the Act provides for the establishment of rules and regulations to permit reasonable variations and tolerances and also to exempt small packages. The regulations already in force on this subject are contained in the Bulletin of the Association issued on June 12th, 1912.

By the terms of the Act it becomes effective from its passage, but will not be enforced by fine, imprisonment or confiscation for violation of its provisions prior to eighteen months after its passage, March 1st, 1913.



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### WEIGHTS OF DRAINED OYSTER MEAT

The United States Department of Agriculture has issued a notice that to comply with Food Inspection Decision No. 144 canned oysters must show the following weights of drained oyster meat:

Size of can Diameter	Height	Weight of Drained Oyster Meat
2 11-16 in.	2¾ in.	3 oz.
2 11-16 in.	3 6-16 in.	4 oz.
2 11-16 in.	4 No. 1	5 oz.
3⅜ in.	3 15-16 in.	8 oz.
3⅜ in.	4 9-16 No. 2	10 oz.

### CANADIAN REGULATIONS WITH REGARD TO FRUIT PACKAGES

The following regulations will be of interest to shippers sending fruit into the Dominion of Canada:

During the last session of the Canadian Parliament an amendment was passed to the Inspection and Sale Act, Part IX, relating to fruit and fruit packages. The principal provisions of the act, as amended, are incorporated in the following synopsis:

1. That every closed package (box or barrel) must be plainly and indelibly marked with
  - (a) the name and address of the packer, preceded by the words "packed by."
  - (b) the name of the variety, and
  - (c) the grade.
2. That the word "Fancy" or the numerals, No. 1, No. 2 or No. 3, must be used to designate the different grades.
3. That (a) "Fancy" grade must be perfect fruit.
  - (b) No. 1 grade must be 90 per cent free from all defects.
  - (c) No. 2 grade must be 80 per cent free from defects causing material waste, and containing no culls.
4. That the faced or shown surface must be the same grade of fruit as the rest of the package.
5. That the minimum size of the apple barrels is 26¼ inches between the heads, inside measure, a head diameter of 17 inches, and a middle diameter of 18½ inches.



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6. That the apple box must be 10 inches in depth, 11 inches in width and 20 inches in length, inside measurement.

7. That fruit baskets are of four sizes, viz.:

- (a) 15 quarts or more,
- (b) 11 quarts,
- (c) 6 quarts,
- (d)  $2 \frac{2}{5}$  quarts.

8. That berry boxes must contain:

- (a) four-fifths of a quart,
- (b) two-fifths of a quart,
- (c) undersized boxes must be marked with the word "Short."

Sec. 333. The person on whose behalf any fruit is packed, sold, offered or had in possession for sale, contrary to the provisions of the foregoing sections of this Part, shall be liable for the violation of this Part.

Sec. 333c. The person whose name is marked on any closed package of fruit as the packer thereof shall be deemed to be the packer thereof.

Sec. 334. For the purposes of jurisdiction under Part XV of the Criminal Code, in any complaint, information or conviction for a violation of any of the provisions of this Part, the matter complained of may be alleged and shall be held to have arisen at the place where the fruit was packed, sold, offered, exposed or had in possession for sale, or at the residence or usual place of residence of the accused.

The fruit importers must mark all packages of imported fruit at the time they are taken from the car with all the marks required on domestic fruit, the name and address of the importer being used in place of the name and address of the packer of domestic fruit.

## USE OF COPPER SALTS IN THE GREENING OF FOODS

Paragraph 4 of Food Inspection Decision 148 is hereby modified to read as follows:

The Secretary of Agriculture, therefore, will regard as adulterated, under the food and drugs act, foods greened with copper salts which, on and after January 1, 1913, are offered for



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entry into the United States or are manufactured or offered for sale in the District of Columbia or the Territories, or which, on and after May 1, 1913, are shipped in interstate commerce.

JAMES WILSON,  
Secretary of Agriculture.

Washington, D.C., December 26, 1912.

### APPELLATE DIVISION DEFINES THE DUTIES OF EMPLOYERS

The Appellate Division gave a definition recently of what is not negligence on the part of an employer. This decision said: "Failure to guard against that which has never occurred and which is very unlikely to occur and which does not naturally suggest itself to prudent men as something which should be guarded against, is not negligence."

The case in point was a suit brought by Frank Duke, a carpenter in the employ of the American Museum of Natural History for injuries he sustained. He got a verdict for \$12,500 in the Supreme Court, which the higher court recently set aside, ordering a new trial.

The suit was brought under the employers' liability act, about which the court had also something to say, as follows: "If the danger was not one to be reasonably anticipated, it is not the duty of the defendant to provide safeguards, which since the accident are suggested. The master does not guarantee the safety of his servants; he is not obliged to furnish a servant with an absolutely safe place in which to work, nor is he obliged to furnish the best-known appliances. All that he is obliged to do is to furnish appliances that are reasonably safe and fit."

### REGISTRATION OF TRADE-MARKS IN CUBA

American manufacturers and merchants are advised to register their trade-marks in Cuba as soon as possible. In Cuba priority of registration gives the exclusive right to use a trade-mark. The consequences of this law have been grievous for more than one manufacturer. For example, the trade-mark of one of the oldest piano firms in the United States was registered by a Cuban dealer, and thereby became his exclusive property.



Practically the only course left for the piano company is to purchase from this dealer the right to use their mark in Cuba. It is obvious that there is nothing to prevent the registration of popular trade-marks merely for the purpose of making the manufacturer buy the privilege of using his mark in Cuba. Repeated efforts have been made to have this feature of the trade-mark law amended, but thus far without success. [A report from American Minister J. B. Jackson, published in Daily Consular and Trade Reports September 5, 1911, called attention to this same feature of the Cuban trade-mark law.]

#### REGISTRATION OF TRADE-MARKS IN PARAGUAY

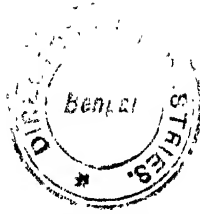
American manufacturers should realize the need of protecting their trade-marks in Paraguay by registration. It is registration alone which gives the right to the exclusive use of a mark in Paraguay. Formerly many American manufacturers thought the possibilities of trade in that country did not warrant the registration of their marks. Now some of these manufacturers have made the unpleasant discovery that when they want to sell their goods there they cannot do so without coming to terms with some persons who have already registered the marks of the American manufacturers in question. Since priority of registration is practically the only test as to the right to use a mark, promptness is advisable.











## TRADE-MARKS

"Trade marks registered for canned foods during year 1918 with registration number, names and addresses of registrants and list of foods covered by the registration; and the serial number attached to the application by the Patent Office, but having no relation to the serial number issued by the Pure Food and Drugs Act. This list was prepared from the complete files of The Trade-Mark Title Company, Fort Wayne, Ind."







## REGISTERED TRADE-MARKS, 1913

**P.C.C.**—No. 91,123. The Pacific Commercial Co. of San Francisco, Cal. Spices, flavoring extracts for foods, canned fruits, vegetables and fish.

**IDOL**—Woman, scene, circle. No. 91,060. Alaska-Portland Packers' Association of Portland, Ore. Canned salmon.

**BOUVELARD**—No. 91,094. Henry Horner & Co. of Chicago, Ill. Canned vegetables, canned fish, flavoring extracts for foods, fruit preserves, olive-oil, tomato catsup, olives, vinegar, ground spices and table syrup.

**BEAUTY**—Woman, roses, design. No. 91,058. Alaska-Portland Packers' Association of Portland, Ore. Canned salmon.

**DUTCH GIRL**—Picture of girl. No. 91,517. Sherr-Gillett Co. of Chicago, Ill. Prepared mustard, olives and spices.

**SUNBEAM**—Picture of child. No. 91,450. Austin, Nichols & Co. of New York, N.Y. Canned shrimp, lobsters, clam chowder, chicken, turkey, baked beans, smoked meat and plum pudding; wet and dry mincemeat, maple syrup, raisins, cornstarch and tea.

**CIRCUS**—Giraffe, lion, leopard, tents. No. 92,795. Frank Herfort of Baraboo, Wis. Canned vegetables.

**SOLITAIRE**—No. 91,364. The Morey Mercantile Co. of Denver, Colo. Canned fruits and vegetables, preserved fruits, jams, marmalades, jellies, strained honey, candy, table syrups, molasses, vinegar, anchovies, sardines, pâté de foie gras, clams, lobsters, oysters, salmon, sliced beef, catsup, chili sauce, salad dressing, capers, mushrooms, mustard, maroons, macaroni, pastes, mincemeat, salted nuts, olive-oil, pimentos, peanut-butter, pickles, truffles and package rice.

**KAIROMEL**—No. 91,323. Corn Products Refining Co. of New York, N.Y. Fruit preserves and fruit jams.

**STAPLE**—Picture of same. No. 91,488. J. F. Humphreys & Co. of Bloomington, Ill. Fruit jams, catsup, olives, mustard, canned oysters, canned salmon, canned fruits, canned vegetables and wheat flour.

**LETTER N ON BLACK BACKGROUND**—No. 91506. Thomas F. Nevins of Brooklyn, N.Y. Fresh fruit.

**DOLLY VARDEN**—Picture of girl. No. 91,470. Fargo Mercantile Co. of Fargo, N.D. Canned fruits, canned vegetables, canned pork and beans, canned salmon and canned lobsters.

**AWACO**—No. 91,489. Illinois Canning Co. of Hooperston, Ill. Canned corn.

**IDEAL**—No. 91,520. George E. Snow of Eastlake, Fla. Oranges.

**KISMET**—No. 91,537. Winston, Harper, Fisher Co. of Minneapolis, Minn. Blended coffee, sardines, canned fruits, canned salmon and a compound of corn and refiner's syrup.

**ST. ELMO**—No. 91,553. Bollinger-Barbage Co. of Louisville, Ky. Canned fruits and vegetables.

**COTTAGE**—No. 91,586. Roy A. Luse of New York, N.Y. Prepared mustard.



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PETER PAN—No. 91,607. George W. Sanborn & Son of Astoria, Ore. Canned salmon.

TURRET—No. 91,606. George W. Sanborn & Son of Astoria, Ore. Canned salmon.

CONVENTO—No. 91,599. Joseph Petrocelli & Co. of New York, N.Y. Olive-oil.

MARKETERIA—No. 91,780. Lutey Bros. of Butte, Mont. Canned fruits, canned vegetables, dried fruits, canned salmon, prepared mustard, fish and meat salads, fruit preserves, canned pork and beans in tomato sauce, fruit jellies, raisins, catsup, olive-oil.

CAFETERIA—No. 91,781. Lutey Bros. of Butte, Mont. Canned fruits, vegetables, dried fruits, salmon, fruit preserves, canned pork and beans in tomato sauce, fruit jellies, raisins, catsup, olive-oil.

GROCETERIA—No. 91,782. Lutey Bros. of Butte, Mont. Canned fruits, vegetables, dried fruits, salmon, prepared mustard, fruit preserves, canned pork and beans in tomato sauce, fruit jellies, raisins, catsup, peanut-butter, olive-oil.

DURBAR—No. 91,762. The Durbar Co. of Jersey City, N.J., and New York, N.Y. Spices, flavoring extracts for foods and olive-oil.

COW'S HEAD—Collar and bell around its neck. No. 91,790. Nestlé & Anglo-Swiss Condensed Milk Co. of Cham and Vevey, Switzerland. Sterilized and condensed milk.

NEWFOUND—No. 91,808. B. M. Shipman Co. of New York, N.Y. Boneless cod Johnnies, smoked bloaters and kippered herring.

VETERAN—Picture of General Sheridan. No. 91,845. E. Franklin Brewster of Rochester, N.Y. Canned vegetables, canned pork and beans and canned salmon.

SMILE—No. 91,894. Pacific Fishers & Packing Co. of Aberdeen, Wash. Canned salmon.

FOREST CITY—No. 91,831. Allen Brothers Co. of Omaha, Neb. Canned fruits and vegetables, mustard, pickles, vinegar, catsup, olives, jams, jellies, preserves, dried fruits and spices.

ARCADIA—No. 92,810. Charles M. Martz, Arcadia, Ind. Canned vegetables.

FACTORIES—Buildings, scene. No. 91,902. George W. Sanborn & Son, of Astoria, Ore. Canned salmon.

FACSIMILE SIGNATURE OF E. C. ORTEGA—Borders. No. 92,118. Pioneer Green Chile Packing Co. of Los Angeles, Cal. Peeled green chili.

AUS-TAY—No. 92,105. Nalley Grocery Co. of Austin, Tex. Canned fruits and vegetables.

SUNNY POINT—No. 92,141. Sunny Point Packing Co. of Seattle, Wash. Canned salmon.

OPACCO—No. 92,112. Onalaska Pickle & Canning Co. of Onalaska, Wis. Canned vegetables, canned pickles, chow-chow, olives, canned sauerkraut and pickles and sauerkraut in bulk.



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**POLLY PRIM**—Sincerely Yours (Miss) Polly Prim, girl, rabbit. No. 92,139. Stetson & Ellison Co. of Camden, Del., and New York, N.Y. Canned vegetables.

**METROPOLITAN**—No. 92,255. J. H. Newbauer & Co. of San Francisco, Cal. Canned fruits, canned vegetables, canned oysters, spices, pepper sauce and table syrup.

**HUCAN**—Man, scrolls. No. 92,220. Humphreys, Cannon & Co. of Memphis, Tenn. Coffee, and flavoring extracts for foods.

**LASSIES**—No. 92,191. Corn Products Refining Co. of New York, N.Y. Table syrup prepared from corn syrup and molasses.

**GOLDEN AGE**—No. 92,318. California Canneries Co. of San Francisco, Cal. Canned fruits.

**EDGEWOOD**—No. 92,347. Mace & Son of Lake Helena, Fla. Peaches, oranges, grapefruit, tangerines, lemons and limes.

**CONCH SHELL**—Picture of shell, orange, circle. No. 92,362. Punta Gorda Citrus Growers' Association of Punta Gorda, Fla. Oranges, grapefruit, tangerines, lemons and limes.

**PHOEBE SNOW**—Handwriting of applicant. No. 92,817. Adolph L. Mock of New York, N.Y. Canned soup, sardines, fish, caviar, condensed milk, catsup, fresh, dried and preserved fruits, canned vegetables, figs, fruit jellies, hominy, honey, mustard, olives and olive-oil.

**GOLD STANDARD**—No. 92,418. Giffin-Hobbs Co. of Fresno, Cal. Raisins.

**RED STANDARD**—No. 92,419. Giffin-Hobbs Co. of Fresno, Cal. Raisins.

**BLUE STANDARD**—No. 92,420. Giffin-Hobbs Co. of Fresno, Cal. Raisins.

**LETTER A**—Figure 1 enclosed in circle. No. 92,606. Warren Packing Co. of Portland, Ore. Canned salmon.

**STRIPES**—Figure of same on scroll. No. 92,550. Fort Myers Citrus Growers' Association of Fort Myers, Fla. Citrus fruits, namely, oranges, lemons, limes, tangerines and grapefruit.

**APEX**—No. 92,581. Rosenberg Bros. & Co. of San Francisco, Cal. Raisins.

**BRIGHT SPOT**—No. 92,709. O. P. Pieper of Milwaukee, Wis. Tomato catsup, flavoring extracts for foods, fruit preserves, fruit jellies, crushed fruits, canned fruits, canned vegetables and chili sauce.

**LITTLE GIRL**—Sitting on a can with picture on side of can. No. 92,719. George W. Sanborn & Son of Astoria, Ore. Canned salmon.

**ANTELOPE**—No. 92,670. Griffith-Durney Co. of San Francisco, Cal. Canned fruits.

**THE CELEBRATED YORKSHIRE RELISH**—Goodall Backhouse & Co., design. No. 92,667. Goodall Backhouse & Co. of Leeds, England. Sauces.

**REINDEER**—No. 92,943. Borden's Condensed Milk Co. of Montreal, Can. Condensed milk.

**AMERICAN EAGLE**—No. 93,018. Parrish Brothers, Inc., of Baltimore, Md. Pickle-spice.



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**SUM-MO**—No. 92,955. Columbia Coffee Mills, Ltd., of New Orleans, La. Cane syrup and glucose.

**KING**—Man. No. 93,050. Christian Ulrighsen of Baltimore, Md. Canned ingredients composed of pigs' meat, pigs' liver, sweet milk and eggs for sandwiches.

**CIRCLE**—Panel, design. No. 92,997. Walter R. Krembs of Chicago, Ill. Bottled milk.

**PIED PIPER**—No. 92,911. Pratt-low Preserving Co. of Santa Clara, Cal. Canned blackberries, apricots, pears, peaches, apples, grapes, cherries, plums and tomatoes.

**WALDORF-ASTORIA**—No. 92,850. The Waldorf-Astoria Importation Co. of New York, N.Y. Olive-oil.

**PICNIC**—No. 92,808. Roy A. Lusk of New York, N.Y. Prepared mustard.

**THE DONKEY**—Figure of a girl sitting on a donkey. No. 92,755. Jacob Cusimano of New Orleans, La. Tomato paste.

**H. P.**—Scroll, rectangle. No. 93,240. The Harris & Pollard Dehydrated Products Co. of New York, N.Y. Food beverage.

**CURRENCY**—No. 93,238. French & Bean Co. of St. Johnsbury, Vt. Canned vegetables.

**BENEFIT**—No. 93,235. Direct Importing Co. of Boston, Mass. Olive-oil, table sauce, celery-salt, condensed milk, canned soups, tea, coffee, cocoa, chocolate, candy, spices, extracts for flavoring foods, rice, cereal, breakfast foods, cornstarch, shredded cocoanut, gelatin used for food, tapioca, macaroni, spaghetti and vermicelli.

**BELL BUOY**—Figure of same. No. 93,228. Barker, Harris & Kehrhanan of Boston, Mass. Canned fish.

**POINT-SETTER**—No. 93,283. Mason, Sanborn & Ramsdell Co. of Boston, Mass. Canned fruits, vegetables, fish, olives, catsup, fruit jams, jellies and peanut-butter.

**SLEEPY EYE**—Portrait of Old Sleepy Eye. No. 93,316. John F. White Co. of Mount Morris, N.Y. Canned fruits and vegetables.

**CHEERO**—No. 93,457. Emily L. Norrie of New York, N.Y. Salad dressing.

**KNIGHTHOOD**—No. 93,468. Geo. W. Sanborn & Son of Astoria, Ore. Canned salmon.

**PIRETTTO**—No. 93,460. Pillar Bay Packing Co. of Seattle, Wash. Canned salmon.

**LABOR ET HONORE**—Fish, shield, star. No. 93,007. Columbia River Packers' Association of Astoria, Ore. Canned salmon.

**DARKY SEATED ON TWO-WHEELED WAGON DRAWN BY A TEAM OF OXEN**—No. 93,485. The Johnson Pickle Corporation of Richmond, Va. Pickles.



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**AMERICAN LADY**—Woman's head, wreath, candles. No. 93,439. Haas-Lieber Grocery Co. of St. Louis, Mo. Canned foods, fruit preserves, salad dressing, catsup, chili sauce, peanut-butter, apple-butter, mincemeat, vinegar.

**GOODY GOODY**—No. 93,410. J. K. Armsby Co. of Chicago, Ill., and San Francisco, Cal. Canned fruits, dried fruits and raisins.

**VVOO ENCLOSED IN CIRCLE**—No. 93,481. John Wittucci of Seattle, Wash. Olive-oil.

**MYRTLE**—Picture of same. No. 93,435. Fidalgo Island Packing Co. of Anacortes, Wash. Canned salmon.

**SPEAR**—Figure of same. No. 93,624. American Milk Co. of Chicago, Ill. Sweetened condensed milk.

**BOY WITH HIS RIGHT HAND RAISED ABOVE HIS HEAD**—No. 93,739. Meyer & Lange of New York, N.Y. Fruit jelly, calf's foot jelly, bar-le-duc jelly, crab meat, green turtle meat, mushrooms, onions and olives.

**PAY DAY**—No. 93,731. Klauber Wangenheim Co. of San Diego, Cal. Canned vegetables, fruits, meats, alimentary paste products, olives, canned fish, raisins, currants, dried and evaporated fruits, vinegar, pickles and jelly.

**B. P. Co.**—No. 93,629. Charles G. Bonner of Fresno, Cal. Dried fruits and raisins.

**PRAIRIE GIRL**—No. 93,737. Charles C. McDonald of Elyria, Ohio. Canned pork and beans in tomato sauce.

**RED DART**—No. 93,806. J. K. Armsby Co. of Chicago, Ill. Canned fruits.

**GLORY BRAND**—No. 93,910. Antonio Rosano of New York, N.Y. Olive-oil.

**MAPLE LEAF WITH SHEAF OF WHEAT ON IT**—No. 93,880. Malt Food Products Co. of Oswego, N.Y. Table syrup.

**OSCEOLA**—Figure of Indian's Head. No. 93,827. Consolidated Grocery Co. of Tampa, Jacksonville and Pensacola, Fla. Canned fruits, canned vegetables, coffee, tomato catsup and canned fish.

**GOURMET**—No. 93,885. Meyer & Lange of New York, N.Y. Paprika, onions, mushrooms, peas, haricots, macedoines, flageolets, crab meat, green turtle meat, olives, caviar, cherries, brandied fruits, olive-oil and cheese, bar-le-duc-type jelly, calf's foot jelly and fruit jelly, all of which are preserves with the exception of olive-oil, cheese and paprika.

**FIGURE OF WOMAN**—Rectangle. No. 93,834. Dwight Edwards Co. of Portland, Ore. Coffee, tea, spices and flavoring extracts for foods.

**SANANCO**—No. 93,911. San Antonio Drug Co. of San Antonio, Tex. Chocolate and olive-oil.

**HEART**—Figure of same. No. 93,906. Potomac Fruit Growers' Club of Cumberland, Md. Fresh apples and peaches.



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THANK YOU—No. 93,844. Willard A. Godfrey of Watervliet, Mich. Canned fruits and canned vegetables.

MAN FROM HOME—No. 93,871. Kokomo Canning Co. of Kokomo, Ind. Canned vegetables.

FORK BRAND—No. 93,802. M. Amieux & Cie. of Nantes, France. Canned sardines and tunny fish.

PRAGADA—No. 93,860. Paul Jörn of Hamburg, Germany. Canned ham.

WHITE CLOVER—Figure of same. No. 94,136. Warren Packing Co. of Portland, Ore. Canned salmon.

SCOUT—Picture of Boy Scout. No. 94,007. John F. Lalla Co. of Chicago, Ill. Sardines in oil, sardines in mustard, canned vegetables, tomato puree, canned pork and beans, dried currants, seeded and seedless raisins, canned corn syrup and canned fruits.

SMILAX—No. 94,008. Libby, McNeill & Libby of Chicago, Ill. Canned peaches, plums, apricots, pears and cherries.

ACROPOLIS—No. 94,021. Mave McCord Mercantile Co. of St. Joseph, Mo. Vinegar, tomato catsup, olives, mustard, jellies, jams, preserves, pickles and peanut-butter.

KING COLE—No. 93,973. Emily D. Day of New York, N.Y. Figs, dried fruits and nuts.

EVERYBODY'S—No. 94,187. Lindenberger Packing Co. of Seattle, Wash. Canned salmon.

MEN—Cannon, city. No. 94,175. C. Giacona & Co. of New Orleans, La. Olive-oil.

BIG SMOKE—No. 94,208. Seacoast Canning Co. of Eastport, Me. Canned sardines.

SNOWDRIFT—Satin. No. 94,186. Lawton, Jordon & Co. of Macon, Ga. Evaporated milk.

FRENCH'S—No. 94,174. The R. T. French Co. of Rochester, N.Y. Mustard (dry and prepared), paprika, curry-powder, celery salt, pepper, herbs used for food products, spices, tapioca, sago, bird food, flavoring extracts for food products, peanut-butter, horseradish, poultry seasoning, tabasco sauce, jelly powder.

BUILDING—Seal, double eagle, *Non Lucio Sed Luci*. No. 94,146. Francesco Albano of New York, N.Y. Olive-oil.

PICTURE OF WOMAN, SHIELD, CROSS, STAR, BUILDING—No. 94,147. Francesco Albano of New York, N.Y. Olive-oil.

COLUMBUS AND PORTRAIT—No. 94,162. California Fruit Cannery's Association of San Francisco, Cal. Dried fruits.



## REFERENCE TABLES







# REFERENCE TABLES

## THE METRIC SYSTEM

The unit of the Metric System is the meter, originally taken to be the one-ten-millionth part of a quadrant of a meridian, the distance between the Equator and the Pole. Although this ratio has been found to be in error, a platinum-indium bar of the assumed length at 0° Centigrade is still retained as the standard meter and is on deposit at the International Bureau of Weights and Measures, Paris, France. At the same time a platinum block whose mass was made equal to a cube of pure water at greatest density, and at 4° Centigrade, having an edge one-tenth of one meter long, was adopted as the standard of weight and called a kilogram. The Gram, unit of weight is a cube of pure water, at greatest density, whose edge is the one-hundredth part of a meter in length and therefore the one-thousandth part of a kilogram and the one-millionth part of a metric ton. The subdivisions and multiples of these units are in decimal ratios, as the entire Metric System runs on the decimal system.

The Metric System has been adopted by nearly all the European nations, and by Mexico, Chile, Peru and several other countries. In Great Britain and Russia it is permissive. In some countries an attempt has been made to roughly standardize the Metric System in connection with the usual system of weights and measures, called the English system. In Germany a one-half kilogram is equal to a pound; in Switzerland three-tenths of a meter is equal to a foot. The introduction of the system in the United States had been long recommended by scientific men, when in 1866 through the influence of Charles Sumner, Congress authorized its use in the United States and provided for its introduction in the Post Office for the weighing of letters and papers. The Post Office, however, continues to use the old system. The following are metric tables with their relations to the common system units:

The ARE, or unit of square measure, is a square whose side is 10 meters.

The STERE, or unit of cubic measure, is a cube whose edge is a meter.

The LITER, or unit of all measures of capacity, is a cube whose edge is the tenth of a meter.

The GRAM, or unit of weight, is the weight of a cube of pure water at its greatest density, the edge of which is the hundredth part of a meter.

Elements of the System

Length.	Surface.	Capacity.	Weight.	Notation.
Myriameter.	Hectare. Decare.	Kiloliter. Hectoliter. Decaliter.	Metric ton.	1,000,000
Kilometer.			Quintal.	100,000
Hectometer.			Myriagram.	10,000
Decameter.			Kilogram.	1,000
			Hectogram.	100
			Decagram.	10
<i>Meter.</i>	<i>Are.</i>	<i>Liter.</i>	<i>Gram.</i>	1
Decimeter.	Centiare.	Deciliter.	Decigram.	.1
Centimeter.		Centiliter.	Centigram.	.01
Millimeter.		Milliliter.	Milligram.	.001

### Surface Measure Unit=1 Are

1 square meter=1 centare=10.7643 sq. ft.  
 100 centares =1 are=.024 acre  
 100 ares =2.471 acres=1 hectare



# THE MAX AMS MACHINE CO.

## Linear, or Long Measure

	Meters.	Inches.	Feet.	Yards.	Miles.
Millimeter.....	.001	.03937	.00328	.00109	.....
Centimeter.....	.01	.3937	.03280	.01093	.....
Decimeter.....	.1	3.937	.32808	.10936	.00066
Meter.....	1	39.37	3.28083	1.093611	.00062
Decameter.....	10	.....	32.80833	10.93611	.00621
Hectometer.....	100	.....	328.0833	109.3611	.06213
Kilometer.....	1,000	.....	3280.833	1093.611	.62137
Myriameter.....	10,000	.....	.....	.....	6.2137

<sup>1</sup> 39.37 inches is the legalized equivalent of the meter in the United States. The exact equivalent is 39.37079 inches.

## Square Measure

	Square Meters.	Square Inches.	Square Feet.	Square Yards.	Acres.
Milliare.....	.1	155	1.0764	.1196	.....
Centiare, or square meter.....	1	1550	10.764	1.196	.....
Deciare.....	10	.....	107.64	11.96	.0024
Are, or square decameter.....	100	.....	1076.4	119.6	.0247
Decare.....	1,000	.....	.....	1196	.2471
Hectare.....	10,000	.....	.....	.....	2.471

A square centimeter equals 0.155 square inches, a square decimeter 15.5 square inches, and a square kilometer 0.386 square miles.

## Cubic Measure

	Cubic Meters.	Cubic Inches.	Cubic Feet.	Cubic Yards.
Millistere, or cubic decimeter.....	.001	61.023	.035314	.....
Centistere.....	.01	610.23	.35314	.01308
Decistere.....	.1	.....	3.5314	.1308
Stere, or cubic meter.....	1	.....	35.314	1.308
Decostere.....	10	.....	353.14	13.08
Hectostere.....	100	.....	.....	130.8

## Measure of Capacity

	Liters.	Fluid Ounces.	Quarts.	Gallons.	Bushels.
Milliliter, or cubic centimeter.....	.001	.0338	.00106	.....	.....
Centiliter.....	.01	.338	.01057	.00264	.....
Deciliter.....	.1	3.38	.10567	.02642	.002838
Liter, or cubic decimeter.....	1	33.8	1.0567	.26417	.028377
Decaliter.....	10	338	10.567	2.6417	.283774
Hectoliter.....	100	.....	105.67	26.417	2.83774
Kiloliter.....	1,000	.....	.....	264.17	28.3774
Myrialiter.....	10,000	.....	.....	2641.7	283.774

A liter of water at its maximum density weighs a kilogram.



# MOUNT VERNON, N.Y.

## Weight

	Grams.	Grains.	Ounces Avoir- dupois.	Pounds Avoir- dupois.	Tons of 2240 Pounds.
Milligram.....	.001	.01543			
Centigram.....	.01	.15432			
Decigram.....	.1	1.54324	.0035		
Gram.....	1	15.43236	.0353	.0022	
Decagram.....	10	154.32356	.3527	.0220	
Hectogram.....	100	1,543.23564	3.5274	.22046	
Kilogram.....	1,000	15,432.35639	35.274	2.20462	.000884
Myriagram.....	10,000			22.0462	.008842
Quintal.....	100,000			220.462	.08842
Millier, or tonneau...	1,000,000			2204.62	.9842

## COMPARISON OF METRIC SYSTEM WITH THE UNITED STATES METHOD OF WEIGHTS AND MEASURES

(Arranged in Alphabetical Order.)

Are (100 square meters) = 119.6 square yards.

Bushel = 2150.42 cubic inches, 35.24 liters.

Centare (1 square meter) = 1550 square inches.

Centigram (1/100 gram) = 0.1543 grain.

Centiliter (1/100 liter) = 2.71 fluid drams, 0.338 fluid ounce.

Centimeter (1/100 meter) = 0.3937 inch.

1 Cubic centimeter = 16.23 minims (Apothecaries).

10 Cubic centimeters = 2.71 fluid drams (Apothecaries).

30 Cubic centimeters = 1.01 fluid ounces (Apothecaries).

100 Cubic centimeters = 3.38 fluid ounces (Apothecaries).

473 Cubic centimeters = 16.00 fluid ounces (Apothecaries).

500 Cubic centimeters = 16.90 fluid ounces (Apothecaries).

1000 Cubic centimeters = 33.81 fluid ounces (Apothecaries).

Decigram (1/10 gram) = 1.5432 grains.

Decimeter (1/10 meter) = 3.937 inches.

Deciliter (1/10 liter) = 0.845 gill.

Decagram (10 grams) = 0.3527 ounce.

Decaliter (10 liters) = 2.08 quarts (dry), 2.6418 gallons.

Decameter (10 meters) = 39.37 inches.

Dram (Apothecaries or Troy) = 3.9 grams.

Foot = 0.3048 meter, or 30.48 centimeters.

Gallon = 3.785 liters.

Gill = 0.118295 liter, or 142 cubic centimeters.

Grain (Troy) = 0.064804 gram.

Grain = 0.0648.

Gram = 15.432 grains.

Hectare (10,000 square meters) = 2.471 acres.

Hectogram = 3.5274 ounces.

Hectoliter (100 liters) = 2.838 bushels, or 26.418 gallons.

Hectometer (100 meters) = 328 feet 1 inch.

Hundredweight (112 pounds Avoirdupois) = 50.8 kilograms.

Inch = 0.0254 meter.

Inch = 2.54 centimeters.

Inch = 25.40 millimeters.

Kilogram = 2.2046 pounds, or 35.274 ounces.

Kiloliter (1000 liters) = 1.308 cubic yards, or 264.18 gallons.

Kilometer (1000 meters) = 0.62137 mile (3280 feet 10 inches).

Liter = 1.0567 quarts, 0.264 gallon (liquid), or 0.908 quart (dry).

Meter = 39.3700 inches, or 3.28083 feet.

Mile = 1.609 kilometers.

Millier = 2280 feet, or 1609.3 meters.

Millier or tonneau = 2204.6 pounds.



## THE MAX AHS MACHINE CO.

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Milligram = 0.0154 grain.  
 Millimeter (1/1000 meter) = 0.0394 inch.  
 Myriagram = 22.046 pounds.  
 Myriameter (10,000 meters) = 6.2137 miles.  
 Ounce (Avoirdupois) = 28.350 grams.  
 Ounce (fluid) = 28.3966 cubic centimeters.  
 Ounce (Troy or Apothecaries) = 31.104 grams.  
 Peck = 9.08 liters.  
 Pint (liquid) = 0.47318 liter.  
 Pound (Avoirdupois) = 453.603 grams.  
 Pound (English) = 0.453 kilogram.  
 Pound (Troy) = 373.25 grams.  
 Quart (liquid) = 0.94636 liter.  
 Quintal = 220.46 pounds.  
 Scruple (Troy) = 1.296008 grams.  
 Ton = 20 hundredweight = 2240 pounds (Avoirdupois) 1016.070 kilograms.  
 Yard = 0.9144 meter.

### TABLE OF MULTIPLES

Centimeters  $\times$  0.3937 = inches.  
 Centimeters  $\times$  0.0328 = feet.  
 Centimeters, cubic,  $\times$  0.0338 = apothecaries' fluid ounces.  
 Diameter of a circle  $\times$  3.1416 = circumference.  
 Gallons  $\times$  3.785 = liters.  
 Gallons  $\times$  0.833365 = imperial gallons.  
 Gallons, imperial,  $\times$  1.199666 = U. S. gallons.  
 Gallons  $\times$  8.33505 = pounds of water.  
 Gallons, imperial,  $\times$  10 = pounds of water.  
 Gallons, imperial,  $\times$  4.54102 = liters.  
 Grains  $\times$  0.0648 = grams.  
 Inches  $\times$  0.0254 = meters.  
 Inches  $\times$  25.4 = millimeters.  
 Miles  $\times$  1.609 = kilometers.  
 Ounces, Troy,  $\times$  1.097 = ounces of avoirdupois.  
 Ounces, avoirdupois,  $\times$  0.9115 = ounces Troy.  
 Pounds, avoirdupois,  $\times$  0.4536 = kilograms.  
 Pounds, avoirdupois,  $\times$  0.8228572 = pounds Troy.  
 Pounds, Troy,  $\times$  0.37286 = kilograms.  
 Pounds, Troy,  $\times$  1.21527 = pounds avoirdupois.  
 Radius of a circle = 6.283185  $\times$  circumference.  
 Square of the radius  $\times$  3.1416 = area.  
 Square of the circumference of a circle  $\times$  0.07958 = area.

### MISCELLANEOUS MEASURES

Barrel of flour = 196 pounds.  
 Barrel of salt = 280 pounds.  
 Bale of cotton (in America) = 400 pounds.  
 Bale of cotton (in Egypt) = 90 pounds.  
 Bag of Sea Island cotton = 300 pounds.  
 Cable = 120 fathoms.  
 Can = 35 pounds.  
 Cask of lime = 240 pounds.  
 Fathom = 6 feet.  
 Hand = 4 inches.  
 Hogshead = 63 gallons.  
 Keg (nails) = 100 pounds.  
 Noggin or Nog. =  $\frac{5}{16}$  of a pint.  
 Pace = 3.3 feet.  
 Palm = 3 inches.  
 Pipe = 2 hogsheads.



## MOUNT VERNON, N.Y.

Stone = 14 pounds.

Tun = 2 pipes.

Cubic foot of water weighs 62.4 pounds.

Cubic foot of water is 7.48 gallons.

Gallon of water weighs 8 1/3 pounds.

Gallon of water is 231 cubic inches.

In England, wool is sold by the sack, or boll, of 22 stones, which, at 14 pounds to the stone, is 308 pounds.

A pack of wool is 17 stones and 2 pounds, which is rated as a pack load for a horse. It is 240 pounds.

Sack of flour = 280 pounds.

A tod of wool is 2 stones of 14 pounds.

A wey of wool is 6 1/4 tod. Two weys, a sack.

A clove of wool is half a stone.

### STANDARD WEIGHTS AND MEASURES

<b>Avoirdupois Weight</b>			4 quarts	= 1 gallon = 231 cu. in.
437.5 grains	= 1 ounce		63 gallons	= 1 hoghead
16 ounces	= 1 pound		2 hogheads	= 1 butt (or pipe)
100 pounds	= 1 hundredweight		2 butts or pipes	= 1 tun.
20 hundredweight	= 1 ton (short)			
2240 pound	= 1 ton (long or English)			
<b>Troy Weight</b>			<b>Dry Measure</b>	
3.17 grains	= 1 carat		2 pints	= 1 quart = 67.2 cu. in.
24 grains	= 1 pennyweight (dwt.)		8 quarts	= 1 peck = 2 gallons = 537.6 cu. in.
20 pennyweights	= 1 ounce		4 pecks	= 1 bushel = 2150.4 cu. in.
12 ounces	= 1 pound = 5760 grains			
<b>Apothecaries' Weight</b>			<b>Linear Measure</b>	
20 grains (grs.)	= 1 scruple	12 lines	= 1 inch = 25 millim. (approx.)	
3 scruples	= 1 dram	4 inches	= 1 hand	
8 drams	= 1 ounce	9 inches	= 1 span	
12 ounces	= 1 pound = 5760 grains	12 inches	= 1 foot = 30 centim. (approx.)	
<b>Apothecaries' Fluid Measure</b>			3 feet	= 1 yard = .91 meters (approx.)
60 minims (drops)	= 1 dram	2 yards	= 1 fathom	
8 drams	= 1 ounce	5 1/2 yards	= 1 rod, pole or perch	
16 ounces	= 1 pint	4 rods	= 1 chain (Gunter's)	
8 pints	= 1 gallon	220 yards	= 1 furlong	
1 dram	= 1 teaspoonful	8 furlongs	= 1 mile = 1760 yds. = 1.6 kilom.	
2 drams	= 1 de. teaspoonful	3 miles	= 1 league	
4 drams	= 1 tablespoonful			
2 ounces	= 1 wineglass			
4 ounces	= 1 teacup			
<b>Liquid Measure</b>			<b>Surveyors' Linear Measure</b>	
4 gills	= 1 pint = 28.875 cu. in.	10,000 sq. links	7.92 inches = 1 link	
2 pints	= 1 quart	10 sq. chains	100 links = 1 chain	
		640 acres	80 chains = 1 mile	
		36 sq. miles		
<b>Square Measure</b>			<b>Surveyors' Square Measure</b>	
144 square inches (sq. in.)	= 1 square foot		= 1 sq. chain	
9 square feet	= 1 square yard		= 1 acre	
30 1/4 square yards	= 1 square rod, or square pole		= 1 sq. mile	
16 square rods or square poles	= 1 square chain		= 1 township	
40 square rods or square poles	= 1 rood			
4 rods	= 1 acre			
160 square rods	= 1 acre = 43560 sq. ft.			
640 acres	= 1 square mile			
<b>Cubic Measure</b>				
1728 cubic inches (cu. in.)	= 1 cubic foot			
27 cubic feet	= 1 cubic yard			
128 cubic feet	= 1 cord of wood			
40 cubic feet	= 1 shipping ton, Mdee.			
42 cubic feet	= 1 shipping ton, lumber			
<b>Geographical and Nautical Measure</b>				
6086.44 feet	= 1000 fathoms = 1 nautical mile			
1 nautical mile	= 1.153 statute miles			
1 nautical mile per hr.	= 1 knot			
60 nautical miles	= 69.17 statute miles = 1 degree			
<b>Paper Measure</b>				
24 sheets	= 1 quire	2 reams	= 1 bundle	
20 quires	= 1 ream	5 bundles	= 1 bale	



## THE MAX AMS MACHINE CO.

### LIQUID MEASURE

The standard unit of Liquid Measure adopted by the United States Government is the Winchester wine gallon, which contains 231 cubic inches and holds 8.339 pounds avoirdupois of distilled water, at its maximum density weighed in air, the barometer being at 30 inches.

The Imperial gallon adopted by Great Britain contains 277.274 cubic inches and equals 1.20032 United States gallons.

The following cylinders contain some of the measures noted very closely:

	Diameter Inches	Height Inches
Gill.....	1 $\frac{3}{4}$	3
Pint.....	3 $\frac{1}{2}$	6
Quart.....	3 $\frac{1}{2}$	6
Gallon.....	7	6
8 Gallon.....	14	12
10 Gallon.....	14	15

### WORKING LOADS FOR MANILA ROPE

To decide on the size of rope to be safe for 2,000 pounds we give here a condensed table that will prove useful:

Dia. of rope lin. ins.	Ultimate strength lbs.	Working load in lbs. When moving slowly.
1	7,100	1,000
1 $\frac{1}{8}$	9,000	1,250
1 $\frac{1}{4}$	11,000	1,500
1 $\frac{3}{8}$	13,400	1,900
1 $\frac{1}{2}$	15,800	2,200
1 $\frac{3}{4}$	18,800	2,600
1 $\frac{7}{8}$	21,900	3,000

### SAFE LOADS FOR SLINGS

The table shown was computed to fill a need where loads are not regularly weighed, but where the rule obtains that chains, etc., must be of as great a capacity as the hoist upon which they are used, unless the load is positively known to be less than the safe limit given in the table.

Chain		Rope		Cable	
Size Inches	Lb.	Size Inches	Lb.	Size Inches	Lb.
$\frac{1}{4}$	280	$\frac{1}{4}$	120	$\frac{1}{4}$	400
$\frac{5}{16}$	630	$\frac{3}{8}$	270	$\frac{1}{8}$	625
$\frac{3}{8}$	1,120	$\frac{1}{2}$	480	$\frac{3}{8}$	900
$\frac{7}{8}$	1,750	$\frac{5}{8}$	750	$\frac{1}{2}$	1,225
$\frac{1}{2}$	2,520	$\frac{3}{4}$	1080	$\frac{3}{4}$	1,800
$\frac{9}{16}$	3,430	$\frac{7}{8}$	1470	$\frac{7}{8}$	2,025
$\frac{5}{8}$	4,480	1	1920	$\frac{1}{2}$	2,500
$\frac{11}{16}$	5,670	1 $\frac{1}{8}$	2430	1	3,025
$\frac{3}{4}$	7,000	1 $\frac{1}{4}$	3000	1 $\frac{1}{8}$	3,600
$\frac{7}{8}$	10,080	1 $\frac{3}{8}$	3630	$\frac{1}{2}$	4,900
$\frac{1}{2}$	13,720	1 $\frac{1}{2}$	4320	1	6,400
1	17,920	1 $\frac{3}{4}$	5880	1 $\frac{1}{4}$	8,100
1 $\frac{1}{8}$	22,680	2	7080	1 $\frac{3}{8}$	10,000

The safe loads are not as high as frequently given, as they are based on the fact that the exact weight of the loads carried is often not known, a condition existing in many shops, particularly small ones where some of the valuable and modern things in shop equipment necessarily have to be dispensed with.



## MOUNT VERNON, N.Y.

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### SEED REQUIRED TO PLANT AN ACRE

The following list, giving the amount of seed of each required to plant an acre of ground, is based upon an average, but the amount given is generally considered to be slightly more than sufficient, so that a thorough distribution of seed may be had from the amount specified. It is always best to have on hand a little more than is actually needed, so as to meet difficulties and resow spots which may be washed out by rain or destroyed in any manner.

Kind of Seed.	Quantity.
Asparagus, in 12-inch drills.....	10 pounds
Asparagus, planted 4 by 1½ feet.....	6 plants
Barley .....	2½ bushels
Beans, bush, in drills 2½ feet.....	1½ bushels
Beans, pole, Lima, 4 by 4 feet.....	20 quarts
Beans, Carolina prolific, etc., 4 by 3 feet.....	10 quarts
Beets, in drills 2½ feet.....	10 pounds
Corn, broom, in drills .....	12 pounds
Corn, field .....	8 quarts
Corn, Sugar .....	10 quarts
Cabbage, outside, for transplanting.....	14 ounces
Cabbage, sown in frames.....	7 ounces
Carrot, in drills 2½ feet.....	4 pounds
Celery, seed for transplanting.....	8 ounces
Celery plants, 4 by 2½ feet.....	25 M. plants
Cucumber, in hills.....	3 pounds
Cucumber, in drills.....	5 pounds
Egg Plant, plants 3 by 2 feet.....	4 ounces
Lettuce, in rows 2½ feet .....	2 pounds
Melons, water, in hills 8 by 8 feet.....	3 pounds
Okra, in drills 2½ x 1¼ feet.....	25 pounds
Onions, in beds for sets.....	70 pounds
Parsnip, in drills 2½ feet.....	8 pounds
Peas, in drills, short varieties.....	2 bushels
Peas, in drills, tall varieties .....	1½ bushels
Peas, broadcast .....	3 bushels
Potatoes .....	9 bushels
Pumpkin, in hills 8 by 8 feet.....	4 quarts
Radish, in drills 2 feet.....	10 pounds
Spinach, broadcast .....	30 pounds
Squash, bush, in hills 4 by 4 feet.....	4 pounds
Squash, running, in hills 8 by 8 feet.....	3 pounds
Tomatoes, in frame .....	3 ounces
Tomatoes, seed, in hills 3 by 3 feet.....	10 ounces
Tomatoes, plants per acre.....	2,800 plants
Turnips, in drills of 2 feet.....	2 pounds
Turnips, broadcast .....	3 pounds



## THE MAX AMS MACHINE CO.

### PRICES OF DIFFERENT FLOORING MATERIALS PER SQUARE FOOT

	For 1,000 sq. ft.	For 10,000 sq. ft.
Marble.....	\$1.25	\$1.00
Cork tile.....	.85	.75
Rubber tile.....	.60	.50
Tile: clay, ceramic, encaustic.....	.60	.50
Mosaic tile.....	.60	.50
Slate.....	.50	.45
Terrazzo.....	.40	.35
Composition flooring.....	.33	.25
Wood, hard maple.....	.18	.16
Asphalt.....	.25	.15
Linoleum.....	.12	.10
Portland cement, mortar finish.....	.08	.06

### WHAT CASH DISCOUNTS AMOUNT TO IF TAKEN REGULARLY

The following tables show the rate of yearly interest which a few cash discounts are equal to:

One per cent. in 10 days on a 30-day bill means 18 per cent. per annum.  
Example: Invoice \$1,000, 30 days net, 1 per cent. for cash in 10 days.

If the merchant pays in 10 days he receives \$10 cash discount, which in effect is the interest the wholesale house pays him for the use of \$1,000 for the 20 days' unexpired time. This is at the rate of 18 per cent. per annum. Proof: The interest on \$1,000 for 20 days at 18 per cent. is \$10.

(2) Invoice \$1,000, terms 60 days net, 2 per cent. for cash in 10 days.  
Discount here is \$20, unexpired time 50 days, interest equivalent, 14 4-10 per cent. per annum.

(3) Invoice \$1,000, terms 6 months net, 6 per cent. for cash in 30 days.  
Discount is \$60, unexpired time 5 months, interest equivalent, 14 4-10 per cent. per annum.

(4) Invoice \$1,000, terms 4 months net, 4 per cent. for cash in 30 days.  
Discount is \$40, unexpired time 3 months, interest equivalent, 16 per cent. per annum.

(5) Invoice \$1,000, terms 6 months net, 6 per cent. for cash in 60 days.  
Discount is \$60, unexpired time 4 months, interest equivalent, 18 per cent. per annum.

### VALUES OF FOREIGN COINS IN UNITED STATES CURRENCY

(Proclaimed by the Secretary of the Treasury July 1, 1912, to be followed in estimating values of foreign merchandise exported to the United States, but subject to change if it is shown that the values have changed at least 10 per cent.)

Country.	Standard.	Monetary Unit.	Value in terms of U.S. money.	REMARKS.
Argen. Rep....	Gold.....	Peso.....	\$0.985	Currency, depreciated paper, convertible at 44 per cent. of face value.
Austria-Hun....	Gold.....	Crown.....	.203	Member of Latin Union: gold is the actual standard.
Belgium.....	Gold.....	Franc.....	.193	
Bolivia.....	Gold.....	Boliviano.....	.389	12½ bolivianos equal 1 pound sterling.
Brazil.....	Gold.....	Milreis.....	.546	Currency, government paper, convertible at \$0.3244 to the milreis.
Canada.....	Gold.....	Dollar.....	1.000	
Costa Rica.....	Gold.....	Colon.....	.465	
B. Honduras....	Gold.....	Dollar.....	1.000	



# MOUNT VERNON, N.Y.

## Values of Foreign Coins in United States Currency—Continued

Country.	Standard.	Monetary Unit.	Value in terms of U. S. money.	REMARKS.
Guatemala.....	Silver.....	Peso.....	.442	Currency, inconvertible paper, exchange rate 16 to 18 pesos equals \$1.00.
Honduras.....	Silver.....	Peso.....	.442	Currency, bank notes, exchange rate March 20, 1912, \$0.415.
Nicaragua.....	Silver.....	Peso.....	.442	Currency, inconvertible paper, exchange rate 16¾ to 17 pesos equals \$1.00.
Salvador.....	Silver.....	Peso.....	.442	Currency, convertible into silver on demand.
Chile.....	Gold.....	Peso.....	.365	Currency, inconvertible paper: exchange rate, approximately, \$0.2230.
China.....	Silver.....	Tael. { Canton..... Haikwan..... Shanghai.....	.723 .737 .682	In other Chinese cities the values differ by several cents.
		Dollar. Hongkong.	.477	
Colombia.....	Gold.....	Dollar.....	1.000	Currency, inconvertible paper: exchange rate, approximately, \$102 paper to \$1 gold.
Denmark.....	Gold.....	Crown.....	.268	
Ecuador.....	Gold.....	Sucre.....	.487	
Egypt.....	Gold.....	Pound.....	4.943	The actual standard is the British pound sterling, which is legal tender for 97½ piasters.
Finland.....	Gold.....	Mark.....	.193	
France.....	Gold.....	Franc.....	.193	Member of Latin Union: gold is the actual standard.
Germany.....	Gold.....	Mark.....	.238	
G. Britain.....	Gold.....	Pound sterling.....	4.8665	
Greece.....	Gold.....	Drachma.....	.193	Member of Latin Union: gold is the actual standard.
Haiti.....	Gold.....	Gourde.....	.965	Currency, inconvertible paper: exchange rate, approximately, \$0.2041.
India.....	Gold.....	Rupee.....	.3244½	(15 rupees equal 1 pound sterling.)
Italy.....	Gold.....	Lira.....	.193	Member of Latin Union: gold is the actual standard.
Japan.....	Gold.....	Yen.....	.498	
Liberia.....	Gold.....	Dollar.....	1.000	Currency, depreciated silver token coins. Customs duties are collected in gold.
Mexico.....	Gold.....	Peso.....	.498	
Netherlands.....	Gold.....	Florin.....	.402	
N'foundland.....	Gold.....	Dollar.....	1.014	
Norway.....	Gold.....	Crown.....	.268	
Panama.....	Gold.....	Balboa.....	1.000	
Persia.....	Gold.....	Kran.....	.1704	This is the value of the gold kran. Currency is silver circulating above its metallic value: exchange value of silver kran, approximately, \$.0885.
Peru.....	Gold.....	Libra.....	4.8665	
Phil. Islands.....	Gold.....	Peso.....	.500	
Portugal.....	Gold.....	Milreis.....	1.080	Currency, inconvertible paper: exchange rate, approximately, \$0.9880.
Roumania.....	Gold.....	Leu.....	.193	
Russia.....	Gold.....	Ruble.....	.515	
S. Domingo.....	Gold.....	Dollar.....	1.000	
Servia.....	Gold.....	Dinar.....	.193	
Siam.....	Gold.....	Tical.....	.3708	
Spain.....	Gold.....	Peseta.....	.193	Valuation is for the gold peseta: currency is silver circulating above its metallic value: exchange value, approximately, \$0.1794.
Straits Set.....	Gold.....	Dollar.....	.5677	
Sweden.....	Gold.....	Crown.....	.268	
Switzerland.....	Gold.....	Franc.....	.193	Member of Latin Union: gold is the actual standard.
Turkey.....	Gold.....	Piaster.....	.044	100 piasters equal to the Turkish pound.
Uruguay.....	Gold.....	Peso.....	1.034	
Venezuela.....	Gold.....	Bolivar.....	.193	



## THE MAX AMS MACHINE CO.

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### RANGE OF SIZES HANDLED BY AMS MACHINES

- No. 12. Double Seamer (Hand Lever)**  
Will do up to 14 inches diameter, and 16 inches high.
- No. 2. Double Seamer**  
Will do from 2 to 7 inches diameter, and 2 to 8 inches high.  
With extra long frame will do from 2 to 10 inches diameter,  
and 2 to 12 inches high.
- No. 2. Type "B" Double Seamer (with Automatic Feed)**  
Will do from 1½ to 4¼ inches diameter, and from 2 to 6 inches  
high.
- No. 68. Double Seamer**  
Will do from 2 to 12 inches diameter, and from 1½ to 9 inches  
high.  
Extension piece can be placed on top of frame so that machine  
will do cans up to 15 inches high.
- No. 68. Double Seamer (with Automatic Feed)**  
Will do from 2 to 6¼ inches diameter, and from 1½ to 9 inches  
high.
- No. 58. Double Seamer (Hand Feed)**  
Will do from 2 to 6¼ inches diameter, and 2½ to 7 inches high.  
Machine is recommended for large diameters up to 6¼ inches  
diameter.
- No. 58. Double Seamer (Automatic Feed)**  
Will do from 2 to 6¼ inches diameter, and 2½ to 9 inches high.  
Can be made special, to do cans 1½ inches high.
- No. 58-D. Double Seamer with Automatic Feed and Magazine Cover Feed**  
Will do from 2 to 4¼ inches diameter, and 2½ to 6 inches  
high.
- No. 98. Double Seamer (Hand Feed)**  
Will do from 2 to 4¼ inches diameter, and from 2½ to 6 inches  
high.
- No. 98-A. Double Seamer (Hand Turret Feed)**  
Will do from 2 to 4¼ inches diameter, and from 2½ to 6  
inches high.
- No. 98-AB. Double Seamer (Hand Turret Feed)**  
Will do from 2 to 6¼ inches diameter, and from 2½ to 7  
inches high.
- No. 98-AT. Double Seamer Automatic Turret Feed for No. 3 cans and  
smaller.**
- No. 98-CF. Double Seamer Automatic Turret and Cover Feed for cans  
up to and including No. 3.**
- No. 98-BT. Double Seamer Automatic Turret Feed for No. 10 cans and  
smaller.**
- No. 498. Four Spindle Double Seamer**  
Will do from 2 to 6¼ inches in diameter and up to one gallon.



## MOUNT VERNON, N.Y.

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- No. 22. Double Seamer for irregular cans  
Will do from  $1\frac{1}{2}$  to 12 inches, square cans, and from  $1\frac{1}{2}$  to 14 inches high.
- No. 72. Double Seamer  
Will do from  $1\frac{3}{4}$  inches square to 6 inches square diameter, and from 2 inches to  $10\frac{1}{4}$  inches square high.
- No. 102. Automatic Double Seamer for round cans  
Will do from 6 to 15 inches diameter, and from  $2\frac{1}{2}$  to 15 inches high.
- No. 82. Double Seamer for irregular cans  
Will do from  $7\frac{1}{2}$  to 23 inches diameter, across corners, and  $1\frac{1}{2}$  to 16 inches high.
- No. 5. Power Flanger, regular size  
Will take up to 10 inches diameter, and 8 inches high.  
Also made with extra long frame, which will take up to 10 inches diameter, and 14 inches high.
- No. 15. Automatic Flanger, round cans  
Will take up to  $6\frac{1}{4}$  inches diameter, and 8 inches high.
- No. 61. Automatic Flanger, irregular shaped cans  
Will do cans 6 inches long, and  $4\frac{1}{2}$  inches wide.
- No. 74. Lining Machine (round covers)  
Will handle cans up to  $6\frac{1}{4}$  inches diameter.
- No. 75. Lining Machine (for round and irregular covers)  
Will handle up to 6 inches diameter.
- No. 50. Automatic Lining Machine  
Will handle round covers from 2 to  $6\frac{1}{4}$  inches diameter.
- No. 100. Automatic Lining Machine (for round and irregular covers)  
Will handle up to  $6\frac{1}{4}$  inches diameter.
- No. 300. Lap Seam Soldering Machine  
Will handle up to  $6\frac{1}{4}$  inches diameter, and  $7\frac{1}{2}$  inches high.
- No. 300. Lap Seam Soldering Machine, large size  
Will do up to 9 inches diameter, and 11 inches high.
- No. 88. Lock Seam Can Body Making Machine  
Will handle from  $1\frac{3}{4}$  to  $4\frac{1}{4}$  inches diameter, and up to 6 inches high.
- No. 88-A. Lock Seam Can Body Making Machine  
(With notching and soldering attachment)  
Will handle from  $2\frac{1}{2}$  to  $4\frac{1}{4}$  inches diameter, and from 2 to 6 inches high.
- No. 89. Lock Seam Can Body Making Machine  
Will handle from  $2\frac{1}{2}$  to  $6\frac{1}{2}$  inches diameter, and  $7\frac{1}{4}$  inches high. (With notching and soldering attachment).
- No. 29-B Gang Slitter  
Will handle sheets 31 inches, strip 2 inches and upward.



## **THE MAX AMS MACHINE CO.**

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### **A FEW USEFUL DON'TS FOR THOSE WHO USE AMS DOUBLE SEAMERS**

Don't have your chuck too high, the seaming rollers will ruin the seaming chuck.

Don't have your chuck too low, the countersink in cover will be too deep after seamed and can will stick to chuck.

Don't put too much pressure on base-plate as it will force cover inside in can, making countersink too deep.

Don't have too little pressure on base-plate; the can will slip.

Don't set the first operation roller too tight as it will circle the metal too close making it necessary to roll it back by the finishing roller.

Don't set the first roller too loose as it will leave the seam too wide and not properly underhook.

Don't use a two-pound seaming ring with a three-pound chuck; they must correspond.

Don't put the first operation roller in the place where the second operation roller should be.

Don't forget to oil your machine well, it is better a little too much than not enough.

Don't let your machine run when not in use.

Don't run machine backwards.

Don't forget to regulate your oil cup so it will feed about three drops a minute.

Don't forget to close oil cup when machine is not running, the oil will feed as long as there is oil in the cup and is only wasted.

Don't use dirty oil or grease for lubricator, the least little dirt will spoil the bearings.

Don't keep the lubricating oil and grease in an open can; dirt and dust will blow in.

Don't mix lubricating oil with kerosene; some of it may get into your canning product and ruin the whole batch.

Don't use a poor grade of lubricating oil; a good grade is practically tasteless, and far cheaper in the end.

Don't forget to take out seaming ring when finished with day's work; clean well and oil.



## MOUNT VERNON, N.Y.

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Don't forget to clean your machine when finished.

Don't use a hammer when adjusting any part of machine, there are special tools for this purpose.

Don't fail to keep bolts and nuts tight.

Don't forget to make a can test once in a while to be sure that the can is tight; you may save a lot of money.

Don't forget to think before trying to adjust a machine.

Don't leave gear guard and chuck hood open while machine is running.

Don't leave wrenches lying on any part of the machine.

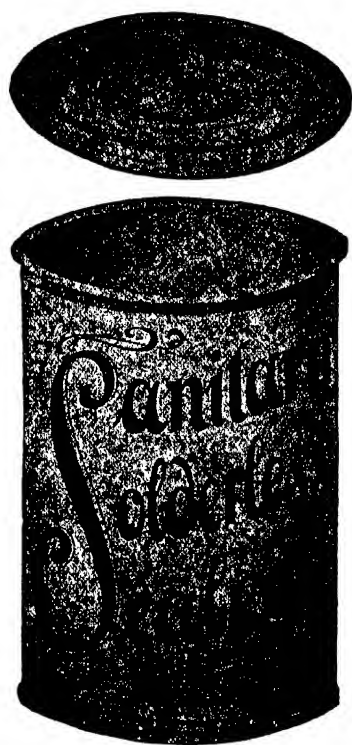
Don't try to seam cans that are bent out of shape; it is cheaper to first straighten them.

Don't forget to write and ask us if there is something you don't understand about the machine.









SANITARY CAN



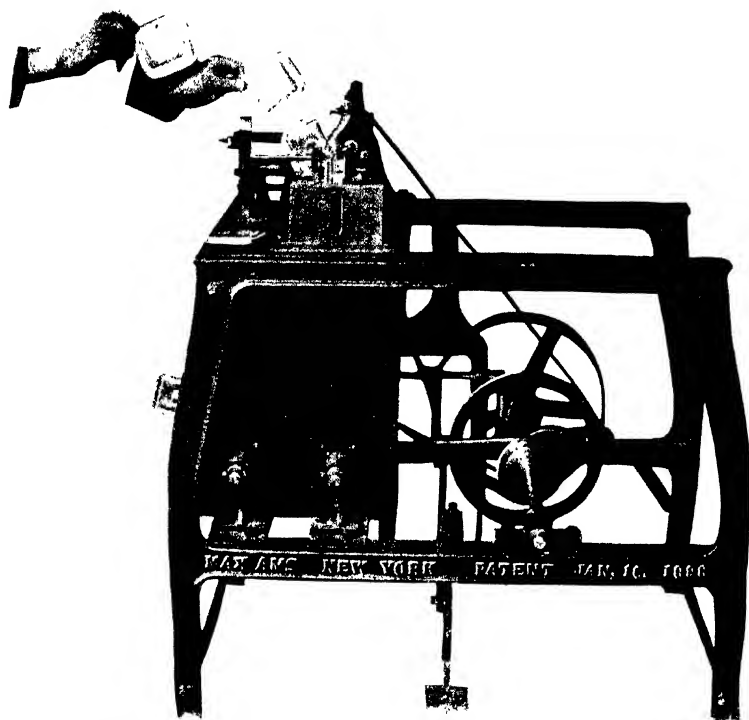




THERE'S A DOUBLE SEAMER IN THE  
AMS LINE THAT WILL  
EXACTLY MEET YOUR NEEDS



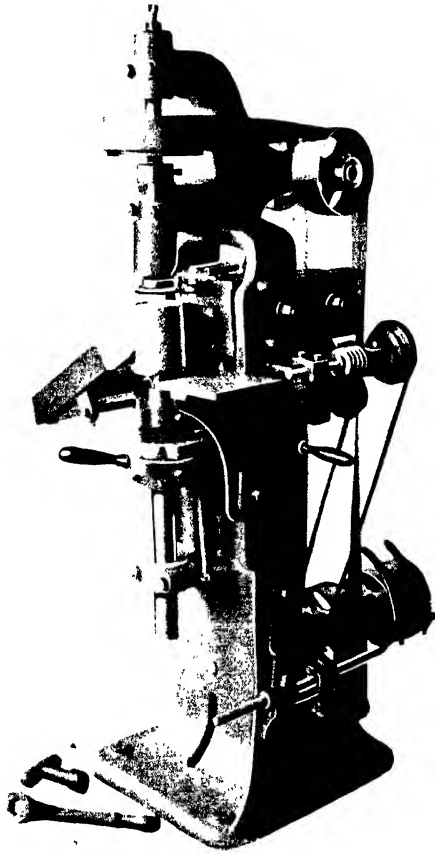
THE MAX AMS MACHINE CO.



One of the early Lining Machines for square covers. Photograph taken fifteen years ago.



MOUNT VERNON, N.Y.



PATENTED

Ams No. 2 Adjustable Double Seamer

One of the early models.



## THE MAX AMS MACHINE CO.

### **No. 2 Adjustable Double Seamer or Heading Machine For Round Cans**

This machine Double Seams both tops or bottoms on round cans from 2 to 7 inches in diameter.

It works automatically throughout.

While designed for hermetically sealing food products which require to be processed, it is also suitable where an airtight or false double seam is required, such as Talcum or Tooth Powders, Baking Sodas, etc.

May be fitted at slight additional cost to handle cans under 2 inches and in excess of 7 inches in diameter.

Its operation is simple and positive, the work uniform, and its capacity limited only by the speed of the operator.

It will readily handle 1,500 to 1,600 ends hourly.

#### **Specifications**

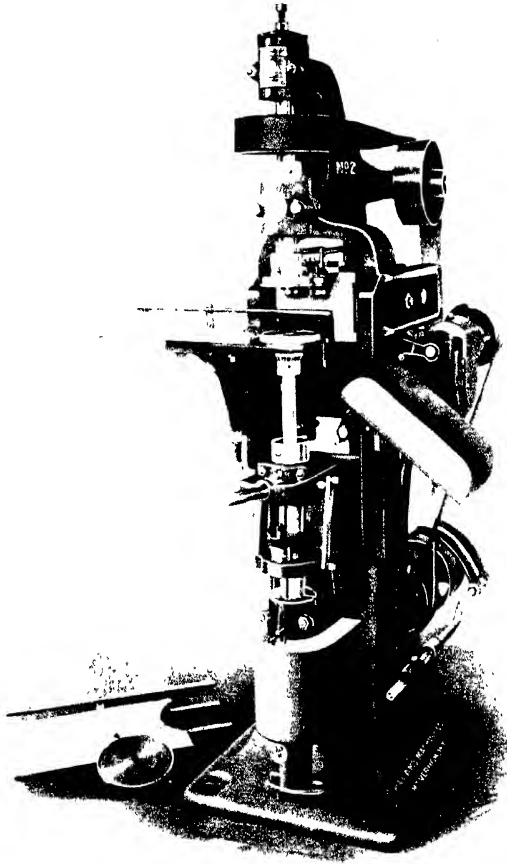
Price, fitted complete for one size  
Extra Double Seaming Rollers, each .. .. .  
Weight, about 950 pounds.  
Driving Pulley, T. & L., 8 x 3 inches.  
Speed, about 1,000 revolutions per minute  
Floor Space, 42 x 22 inches. (106 x 56 cm.)  
Total Height, 62 inches.

#### **Shipping Crate**

4 feet 2 inches long, 2 feet 4 inches wide, 5 feet 8 inches high.  
Cubic Measure, 55 feet ( $11\frac{1}{2}$  cbm.).  
Gross Weight, about 1,300 pounds (590 kg.).



MOUNT VERNON, N.Y.



PATENTED

No. 2 Improved Double Seamer, Hand Feed



## THE MAX AMS MACHINE CO.

### No. 2 Improved Adjustable Double Seamer For Round Cans

#### HAND FEED

This machine double seams both tops or bottoms on round cans, from 2 to 7 inches in diameter, and up to 8 inches in height.

This machine can be fitted to handle cans in excess of 7 inches in diameter, up to 10 inches, at slight additional cost.

The improvements incorporated in this machine over those of the standard type, consist principally in a positive driven base plate, by which means the slipping of cans during the double seaming operation is practically overcome.

The worm gear is encased, running in oil, thereby insuring constant and perfect lubrication.

The machine is fitted with a feed table with rail, and discharging chute.

It is especially intended for hermetically sealing food products which require to be pre-processed, but is not confined to this class of work, and will readily handle false double seaming such as coffee, tea, spice, or packages of a similar nature.

It works automatically throughout, and may be operated by boy or girl.

It will readily handle 1500 to 1600 ends hourly, and as many more as the ability of the operator can turn out.

Special features: Worm Wheel encased and running in oil; extra long bearings at points of greatest wear.

#### Specifications

Price complete for one size can	\$ . . . . .
Additional Chuck, Base Plates and Feed Table	
(according to size)	. . . \$ . . . up
Extra Seaming Rollers	. . . \$ . . . .
Weight, 1150 pounds.	Driving Pulleys, T & L, each 8 in. x 3 in.
Speed about 1000 R. P. M.	Floor Space, 44 in. x 22 in. (106 cm. x 56 cm.)
Total Height, 62 in. (158 cm.)	

#### Shipping Crate

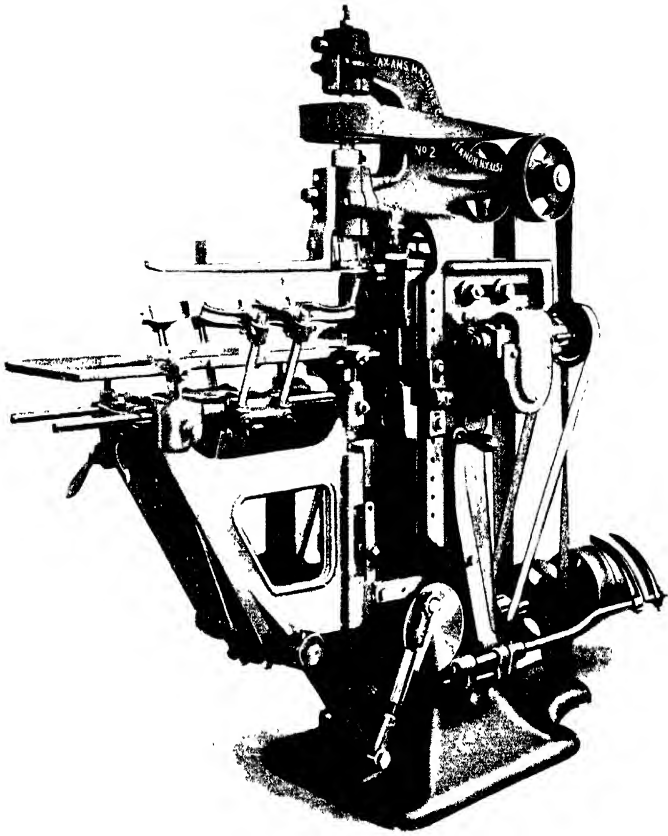
4 feet 2 inches long, 2 feet 4 inches wide, 5 feet 8 inches high.

Cubic Measure, 55 feet ( $1\frac{1}{2}$  cbm.).

Gross Weight, 1300 pounds (590 kg.).



MOUNT VERNON, N.Y.



PATENTED

Ams No. 2 Double Seamer, Automatic Feed



# THE MAX AMS MACHINE CO.

## No. 2 Improved Adjustable Double Seamer

Type B. For Round Cans

### Automatic Feed and Adjustable Feed Table

This is the latest machine of the No. 2, improved type, being complete in all essential details for extra rapid work in seaming tops and bottoms on round cans.

The principal improvements consist of an Automatic Feed, which will readily take 2,000 cans per hour and in addition to this great improvement the *feed table* is *adjustable* and can be *raised* or *lowered* for cans from 2 inches to 6 inches in height, and from 1½ inches to 4½ inches in diameter. This enables the canner to fit the feed to suit size of can.

The solution of the problem for rapid canning, the handling of different size cans, and the perfection of automatic seaming, all have been attained in this machine.

### Specifications

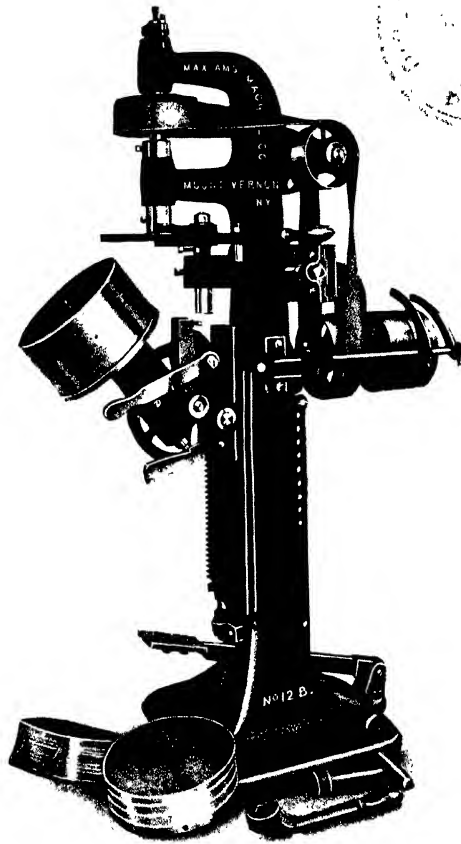
Price complete for one size can . . . . .	\$ . . . . .
Additional Chuck, Base Plates and Feed Table (according to size). . . . .	\$ . . . . .
Extra Seaming Rollers . . . . .	\$ . . . . .
Weight 1250 pounds.	Driving Pulleys, T & L., each 8 in. x 3 in.
Speed, about 1000 R.P.M.	Floor Space, 5 ft. 6 in. x 22 in. (170 cm. x 56 cm.).
Total Height, 62 in (158 cm.).	

### Shipping Crate

6 feet 2 inches long, 2 feet 4 inches wide, 5 feet 8 inches high.  
Cubic Measure, 81 feet (2 cbm.).  
Gross Weight, 1500 pounds (675 kg.).  
Special features: Automatic feed and adjustable feed table.



MOUNT VERNON, N.Y.

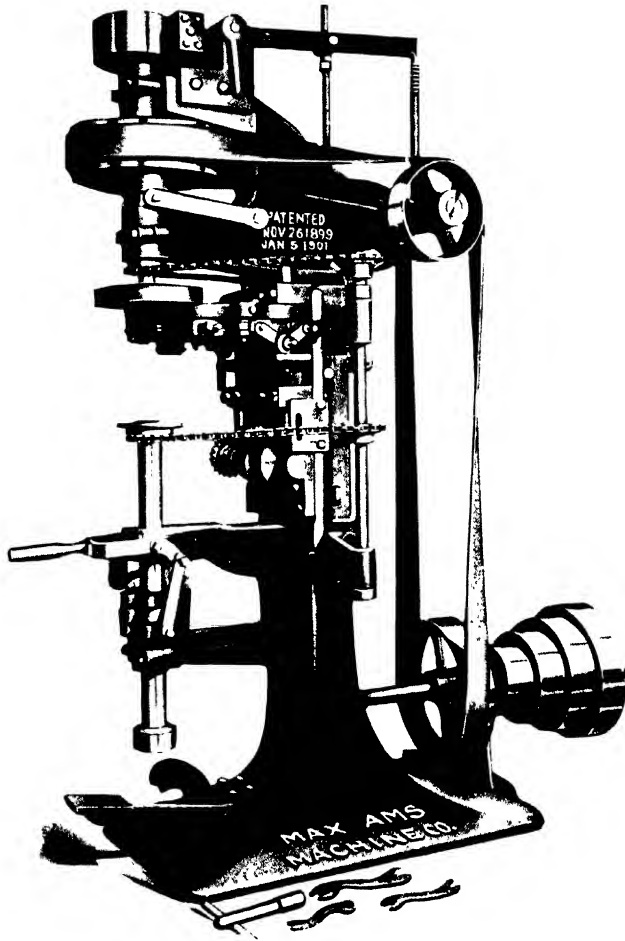


PATENTED

**Ams No. 12B Double Seamer, Swivel Base Plate**  
**Showing Double Seaming for Flat Bottom Work**



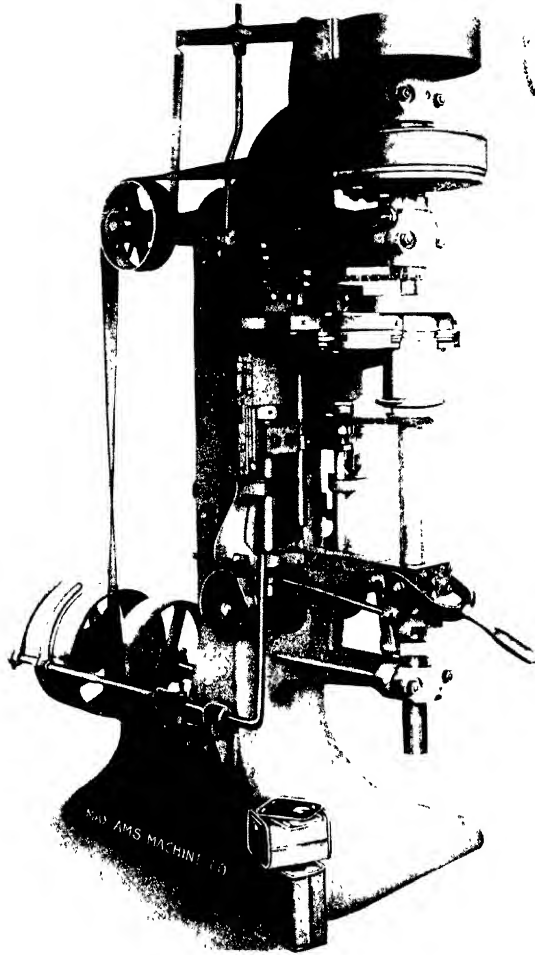
THE MAX AMS MACHINE CO.



Ams No. 20 Double Seamer, Type B  
For Square, Irregular and Round Cans



MOUNT VERNON, N.Y.

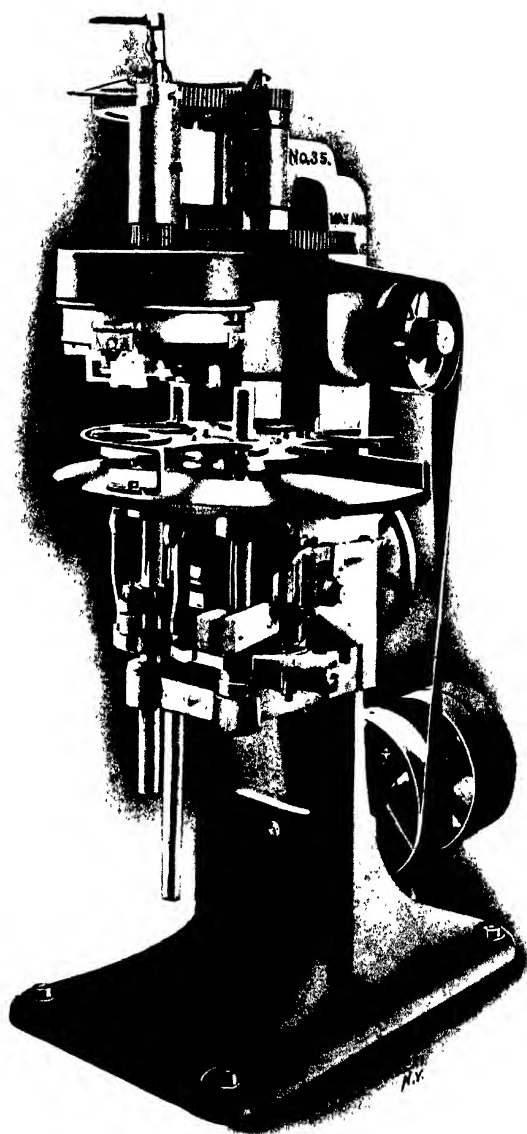


PATENTED

**Ams No. 22 Automatic Double Seamer**  
**For Square, Irregular and Round Cans**



THE MAX AMS MACHINE CO.

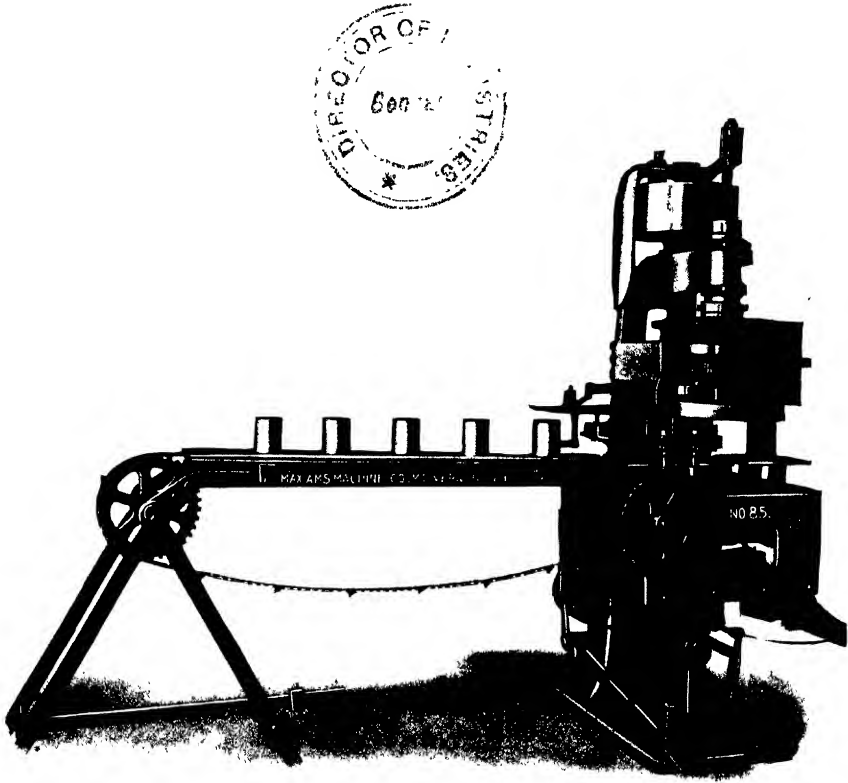


PATENTED

**Ams No. 35 Automatic Double Seamer  
For Round Cans**



MOUNT VERNON, N.Y.



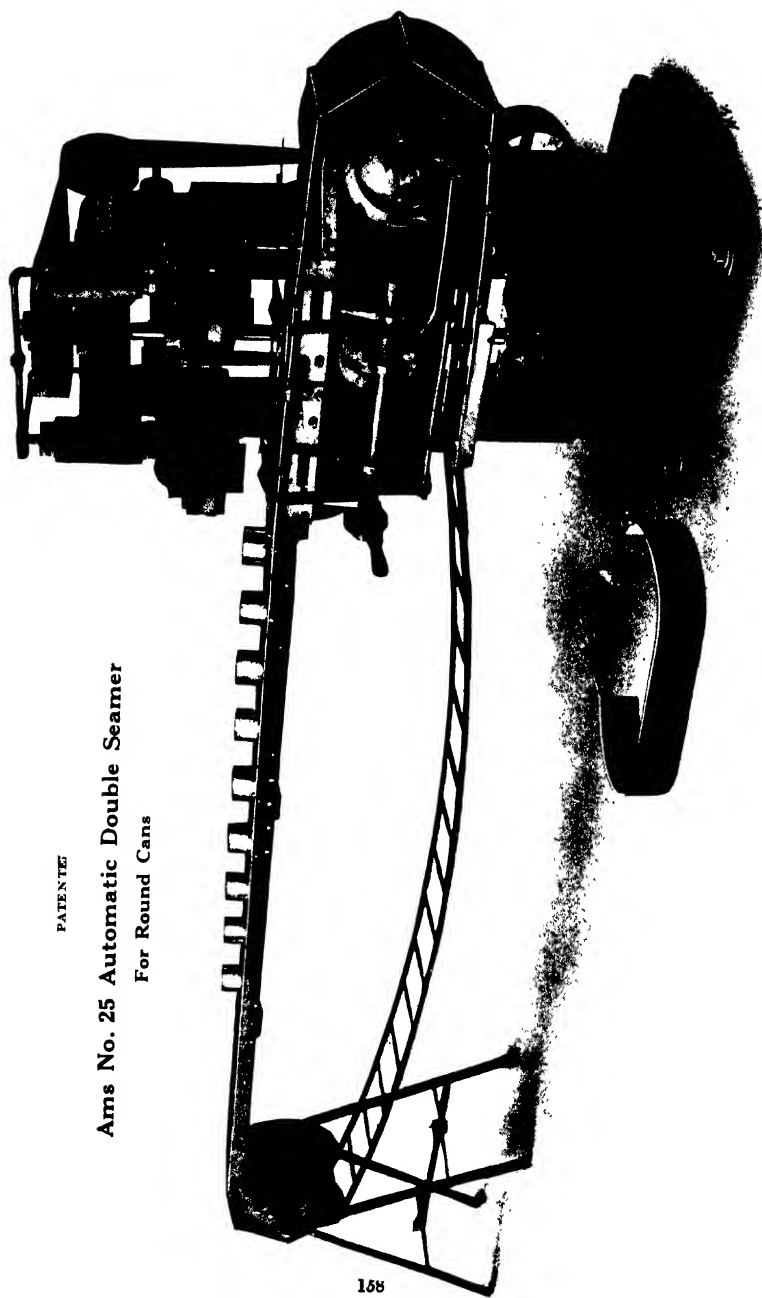
PATENTED

Ams No. 85 Automatic Double Seamer  
For Round Cans



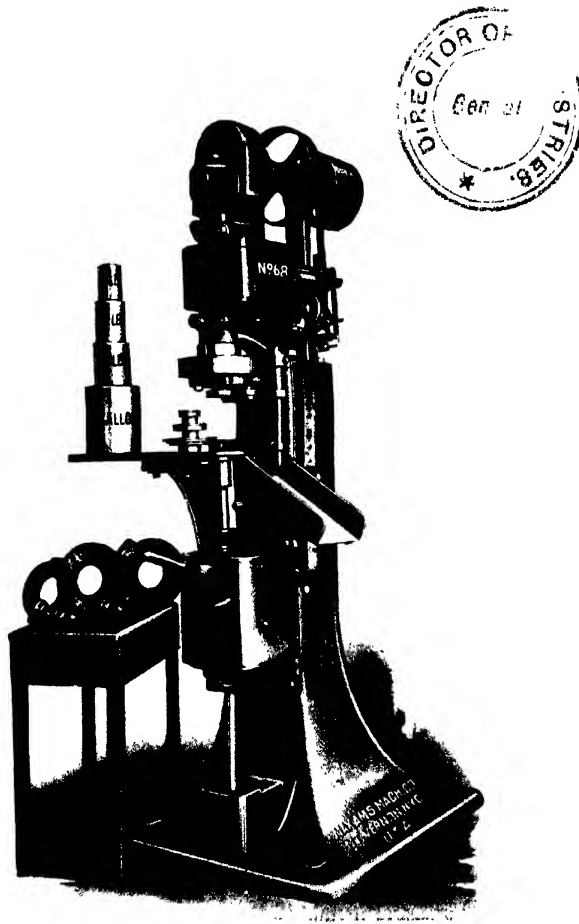
PATENTEE

Ams No. 25 Automatic Double Seamer  
For Round Cans





MOUNT VERNON, N.Y.



PATENTS PENDING

Ams No. 68 Hand Feed Double Seamers



## THE MAX AMS MACHINE CO.

### Ams No. 68 Hand Feed Double Seamers Handles Round Cans Only, The Cans Revolve

This machine will double seam all sizes and styles of standard round and sanitary cans, or any other round containers, such as oil squirt cans, baking powder, coffee, lye cans, etc., made of tin, cardboard, zinc or other like material.

The standard machine will handle all sizes from 2 inches diameter up to 13 inches diameter, and from 1½ inches to 9 inches high, although the machine is so constructed that at slight expense it can be arranged to handle cans up to 15 inches high.

**CAPACITY:**—In hand fed machines the capacity naturally depends upon the operator's ability and ingenuity in performing the work. We know of cases where the operator, becoming expert, has handled as high as 40 and 50 ends per minute for a limited time; however, the average operator should easily handle 1,500 to 1,800 per hour.

The principal features incorporated in this machine, and which cannot be claimed for those of other makes, are as follows:

For each size to be handled there is furnished a separate cast steel SEAMING RING. The seaming rollers are adjusted on these seaming rings before they leave the factory, so that when changing from one size to another it is unnecessary to adjust the rollers, it being only necessary to unbolt one ring and bolt on another.

The seaming mechanism consists of seven parts only besides the seaming ring. There being no lever movement, nothing can get out of order. The construction is strong and compact.

Very liberal bearing surfaces given to the principal working parts, which extends the life of the machine and reduces the repairs to a minimum. Perfect and complete oiling system.

Seaming rollers reversible, that is, they are double grooved. When one groove becomes too much worn for further use, the roller may be reversed and the second groove used.

It takes less than five minutes to change the parts of the machine for handling different sizes of cans.

**SPEED:**—The machine should be run at a speed of about 750 revolutions per minute.

**Note:**—12-inch diameter tight and loose pulleys are furnished unless otherwise specified.

Under certain conditions when a machine is used for cans no larger than 3½ inches in diameter, smaller diameter tight and loose pulleys are desirable, and if specified at the time of placing the order the machine can be fitted with either 10-inch diameter or 8-inch diameter tight and loose pulleys, making it possible to use a smaller diameter driving pulley on the main shaft in the factory, which is sometimes necessary, where the space between the main shaft and the ceiling will not permit the use of a driving pulley large enough to run the machine at the proper speed with 12-inch tight and loose pulleys.

It requires less than a 2 horse-power to operate the machine.

#### Specifications

Floor Space, 34 inches x 35 inches.

Height, 76 inches.

Net Weight, about 1,130 pounds.

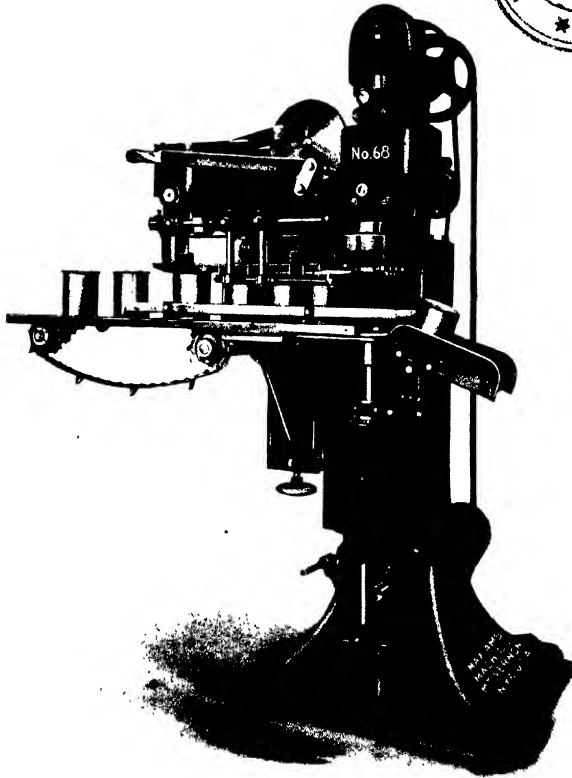
Gross Weight, about 1,500 pounds—kg. 679½, cubic feet 96.

#### Shipping Crate

5 feet 8 inches long, 3 feet 8 inches wide, 6 feet 7 inches high.



MOUNT VERNON, N.Y.



PATENTS PENDING

Ams No. 68 Double Seamer, Automatic Feed



## THE MAX AMS MACHINE CO.

### Ams No. 68 Double Seamer, Automatic Feed

This machine will double seam all sizes and styles of standard round sanitary cans, or round containers, made of tin, cardboard, zinc, or any other like material, such as is used in baking powder boxes, lye cans, spice, paints, wet or dry.

The standard machine will handle all sizes from 2 inches diameter up to 6¼ inches diameter, and from 1½ inches to 9 inches high, although the machine is so constructed that at slight expense it can be arranged to handle much larger work.

The principal features incorporated in this machine, and which are not found in any other makes, are as follows:

For each size to be handled there is furnished a separate cast steel SEAMING RING. The seaming rollers are adjusted on these seaming rings, so that when changing from one size to another it is only necessary to unbolt one ring and put on another, it being unnecessary to adjust the seaming rollers. The feed table is likewise adjustable for the several changes.

Liberal bearing surfaces given to all the principal parts.

The seaming mechanism consists of only 7 parts besides the seaming ring.

Perfect and complete oiling system.

Seaming rollers reversible, i.e., double grooved. When one groove becomes too much worn for further use, the roller may be reversed and the second groove used.

It takes less than fifteen minutes to change the parts of the machine for handling different size cans.

Note:—12-inch diameter tight and loose pulleys are furnished unless otherwise specified. Under some conditions when a machine is used for cans no larger than 3½ inches in diameter, smaller diameter tight and loose pulleys are desirable, and if specified at the time of placing the order, machine can be fitted with either 10-inch diameter or 8-inch diameter tight and loose pulleys, making it possible to use a smaller diameter driving pulley on the main shaft in the factory, which is sometimes necessary, where the space between the main shaft and the ceiling will not permit the use of a driving pulley large enough to run the machine at the proper speed with 12-inch tight and loose pulleys.

### Specifications

Floor Space, 34 inches x 65 inches.

Height, 76 inches.

Net Weight, about 1,900 pounds.

Gross Weight, about 2,300 pounds.

Driving Pulleys, tight and loose, 8-inch, 10-inch or 12-inch.

Horse-power required, approximately 2.

Speed, about 770 R. P. M.

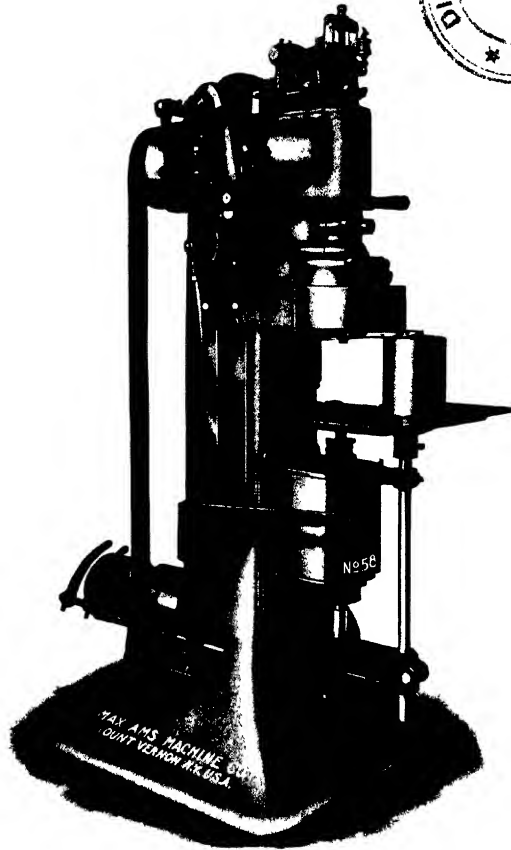
Capacity, over 1,800 per hour.

### Shipping Crate

72 inches long, 45 inches wide, 79 inches high.



MOUNT VERNON, N.Y.



PATENTS PENDING

Ams No. 58 Double Seamer



## **THE MAX AMS MACHINE CO.**

### **Ams No. 58 Double Seamer Hand Feed, For Round Cans**

The No. 58 Double Seamer, illustrated on the reverse side of this page shows the improvement in the hand feed type, wherein the can does not revolve during the seaming operation.

This machine has a stationary base plate on which the can rests firmly while engaging the rollers, which makes a clean, tight double seam. Built for extra large size containers.

Another valuable feature is that all of the mechanism is above the seaming rollers and away from the cans containing the food to be packed.

The simple operating principles incorporated in the No. 68 are to be found in the No. 58 Automatic or hand feed.

All of Max Ams Double Seamers are encased so that danger of accident is reduced to a minimum.

These double seamers are very simple of operation and may be placed in charge of boy or girl.

All machines are timed and adjusted before leaving the factory.

Reversible seaming rollers are used on all our seamers.

#### **Specifications**

Motor attached if ordered. About 2 horsepower required.

Height, 78 inches.

Floor Space, 52 inches x 36 inches.

Net Weight, about 1400 pounds.

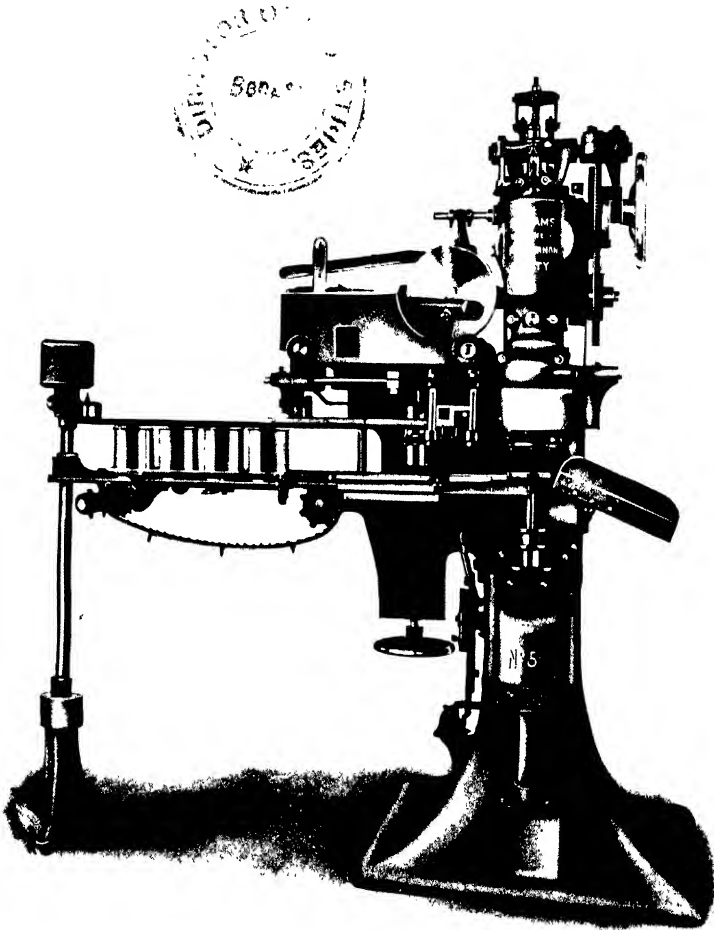
#### **Shipping Crate**

Gross Weight, about 1800 pounds.

Shipping Crate, 60 inches long, 41 inches wide, 81 inches high.



MOUNT VERNON, N.Y.



Ams No. 58 Double Seamer, Automatic Feed



## **THE MAX AMS MACHINE CO.**

### **Ams No. 58 Double Seamer, Automatic Feed For Round Cans, The Can Stands Still**

The difference between the No. 58 and the No. 68 lies chiefly in the operation of the can, which in the No. 58 does not revolve. The automatic feed and the adjustable feed table are similar to those of the No. 68.

This seamer will handle cans from 2 inches diameter by 2 $\frac{5}{8}$  inches high, to 6 $\frac{1}{4}$  inches diameter by 9 inches high. It has a capacity of over 26 gallon cans per minute, and over 36 3-lb. cans per minute.

It has all the advantages contained in the No. 68 and many others, according to the work to be done. The principal features which we have incorporated in this machine, and which are missing in machines of other makes, are the long bearing surfaced parts of the seaming head mechanism running in ball and roller bearings with a good lubricating system. Also the seaming ring feature, which enables an inexperienced person to change the machine from one size to another without the necessity of adjusting the seaming rollers.

Changes can readily be made for all sizes within the range specified.

#### **Specifications**

Weight, about 2200 pounds.  
Floor Space, 34 x 65 inches.  
Height, 76 inches.  
Driving Pulley, 8 inches, 10 inches or 12 inches T. L.  
Horse-power required, 2.  
Capacity, about 1800.  
Speed, about 620 R. P. M.

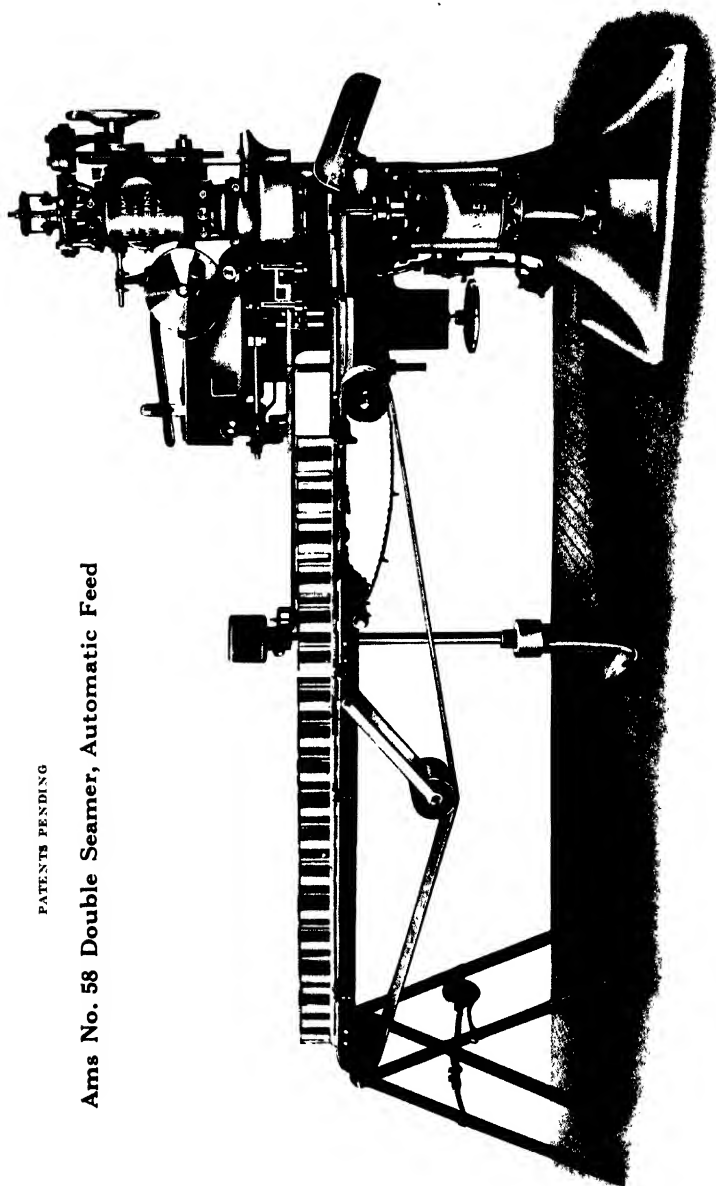
#### **Shipping Crate**

Length, 80 inches; Width, 50 inches; Height, 82 inches.  
Gross Weight, 2,750 pounds. 156 cubic feet. 1,177 kg.



PATENTS PENDING

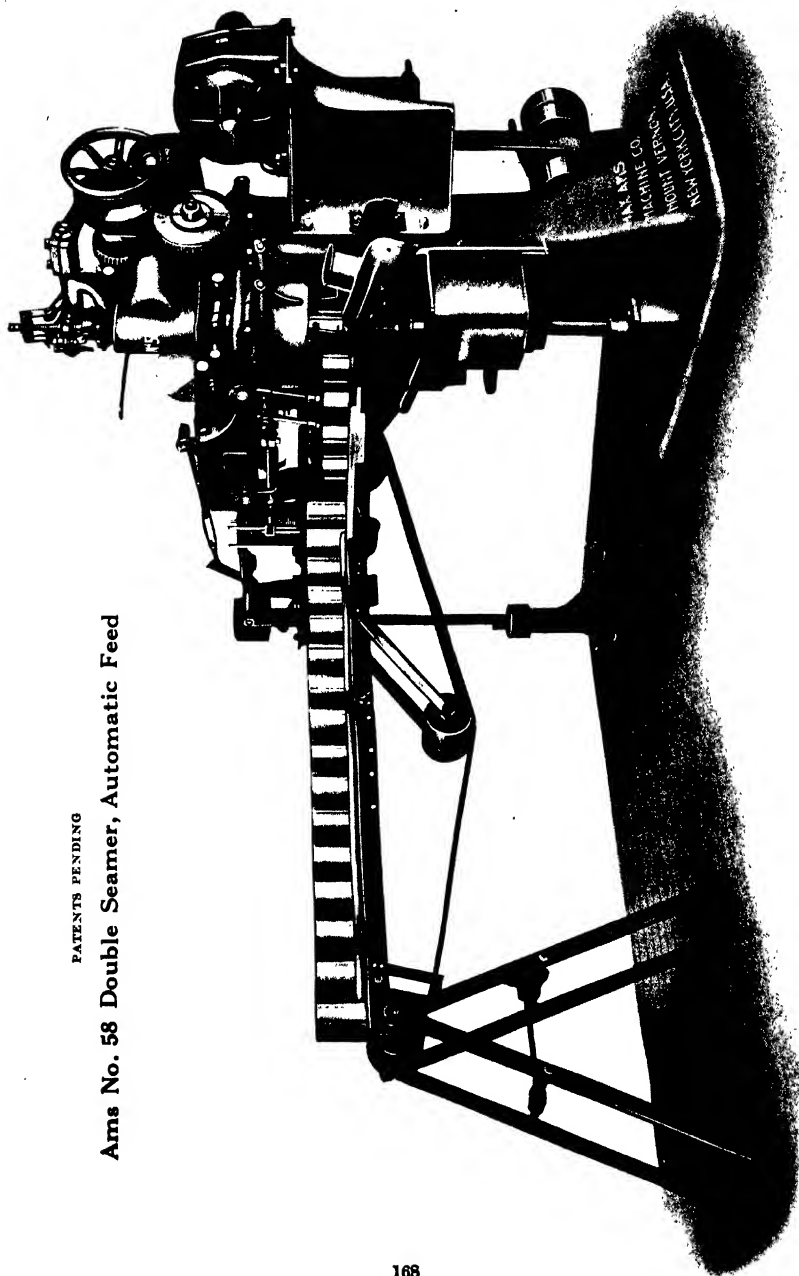
Ams No. 58 Double Seamer, Automatic Feed



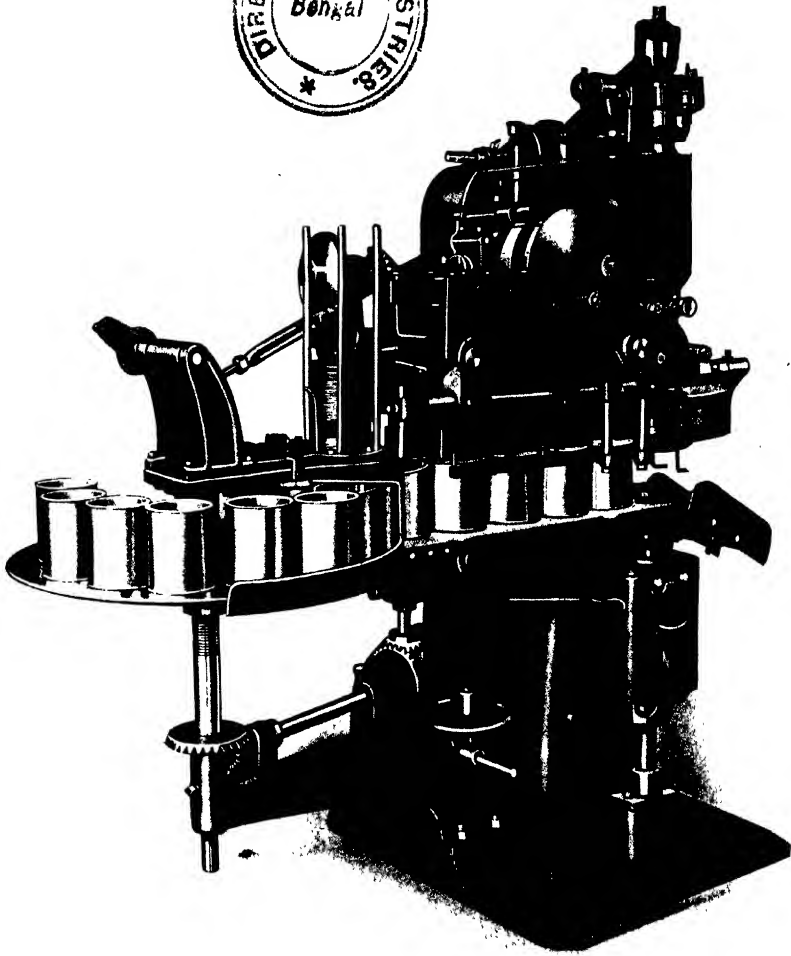
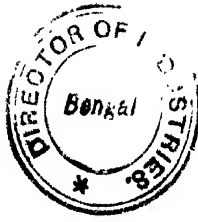


PATENTS PENDING

**Ams No. 58 Double Seamer, Automatic Feed**







PATENTS PENDING

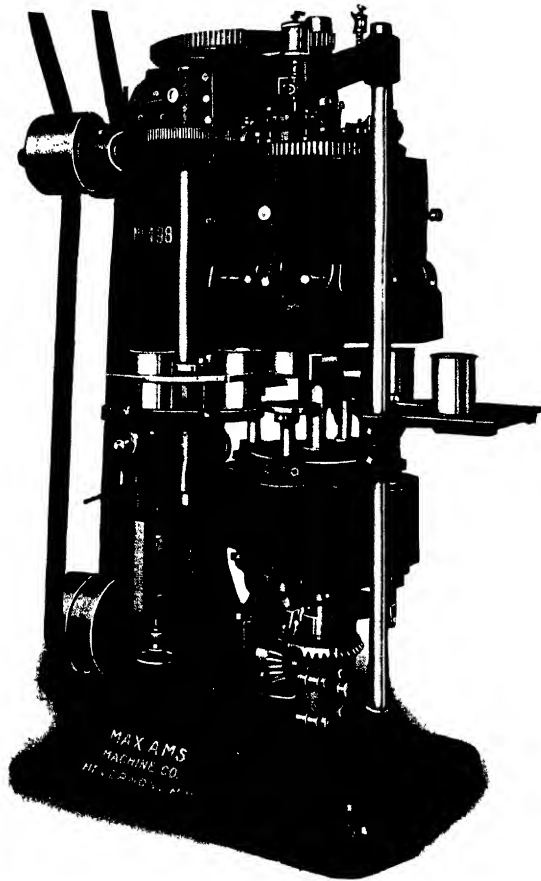
**Ams No. 58D Double Seamer Disc Conveyor  
and Cover Feed**

Capacity 2,000 per hour. No. 1 to No. 3 inclusive.



THE MAX AMS MACHINE CO.

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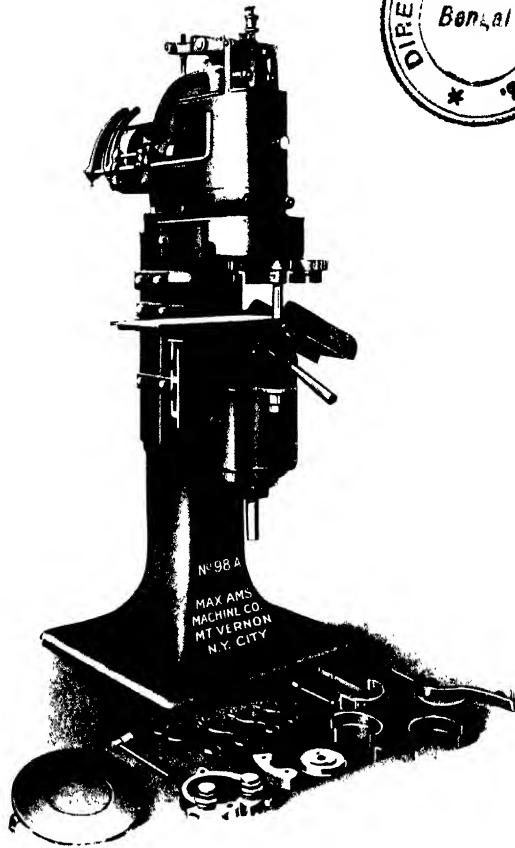
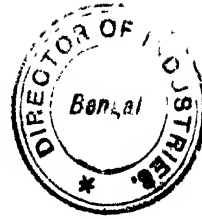
PATENTS PENDING

**Ams No. 498 Four Spindle Double Seamer**

Capacity up to 100 per minute, all sizes including gallon.



MOUNT VERNON, N.Y.



PATENTS PENDING

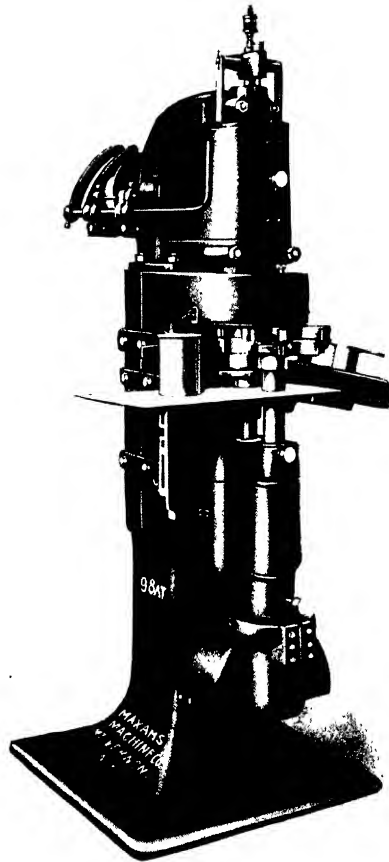
**No. 98A Double Seamer, Turret Hand Feed**

Cans from 2 inches to  $4\frac{1}{4}$  inches in diameter, from  $2\frac{3}{8}$  inches to 6 inches high.



THE MAX AMS MACHINE CO.

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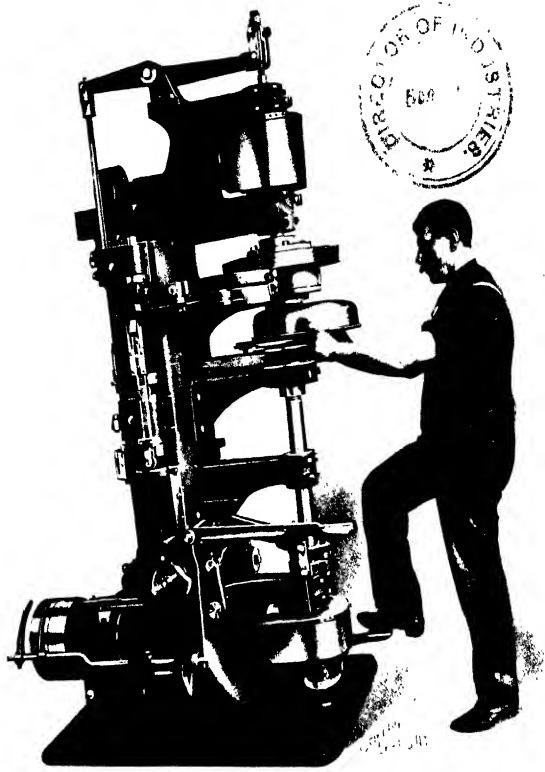
PATENTS PENDING

**Ams No. 98AT Automatic Turret**

Round cans for No. 3 cans and smaller.



MOUNT VERNON, N.Y.



PATENTED

PLACING OVAL ROASTING PAN IN POSITION FOR ROLLING FLANGE.

Ams No. 62 Double Seamer



## THE MAX AMS MACHINE CO.

### Ams No. 62 Double Seamer

#### A Double Seamer for Large Vessels, Pans or Canisters

This is one of the largest seamers in use, and it will seam Round, Oval or Irregular shapes of large vessels.

#### Specifications

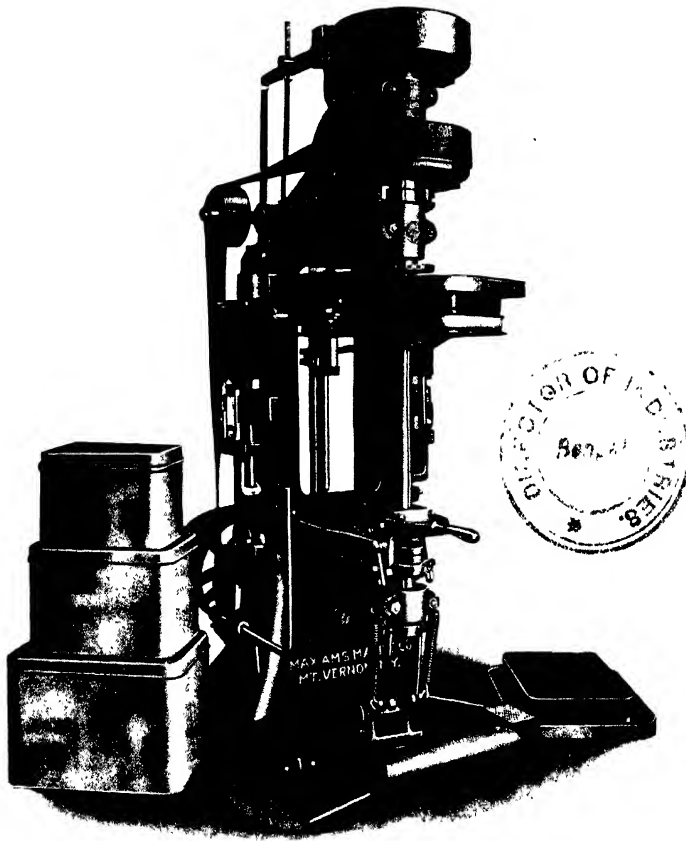
Price complete for one size.....\$ .....  
Additional Chuck, Base Plate and Feed Table according  
to size .....\$.....  
Extra Seaming Rollers . . . . . \$.....  
Weight, about 3,600 pounds. Driving Pulleys T. & L., each 12x3½ inches.  
Speed, 200 revolutions per minute, according to work.  
Floor Space, 5 x 3 feet (1½m. x 1m.). Total Height, 7 feet.

#### Shipping Crate

5 feet 6 inches long, 3 feet 6 inches wide, 8 feet high.  
Cubic Measure, 154 feet (4.31 cbm.).  
Gross Weight, 4,000 pounds (1,800 kg.).



MOUNT VERNON, N.Y.



PATENTED

Ams No. 82 Double Seamer



## THE MAX AMS MACHINE CO.

### Ams No. 102 Double Seamer

These Double Seamers are for large vessels, as the illustration on the other side shows.

Double seams cans from 7 to 15 inches in diameter, and from 8 to 15 inches in height.

Has Rollers, Chuck and Base Plates positive driven.

#### Specifications

Price, complete for one size.....	\$.....
Additional Chuck, Base Plates and Feed Table.....	\$.....
Extra Seaming Rollers.....	\$.....
Weight, 2,600 pounds.	Driving Pulleys, T. & L., 8 x 3½ inches.
Speed, about 625 revolutions per minute, according to size of vessel.	
Floor Space 5 x 3 feet (1½m. x 1 m.).	Total Height, 7 feet.

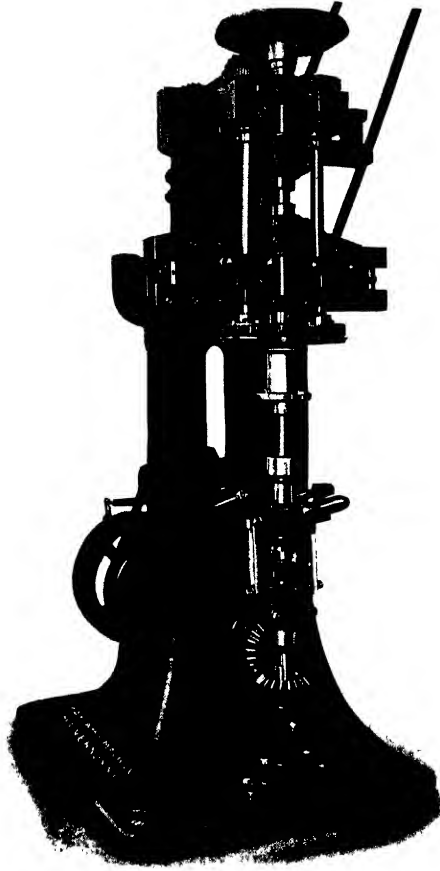
#### Shipping Crate

5 feet 5 inches long, 3 feet 1 inch wide, 7 feet 1 inch high.  
Cubic Measure, 118 feet (36 cbm.).  
Gross Weight, 3,000 pounds (1,350 kg.).



MOUNT VERNON, N.Y.

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PATENTED

Ams No. 72 Double Seamer



## THE MAX AMS MACHINE CO.

### Ams No. 72 Double Seamer

The work of this Seamer is automatic, and under all conditions the base plate remains rigid in alignment with chuck, making it very easy to center all irregular shapes.

The body with cover attached is placed upon the base plate, the handle depressed, and instantly the can is engaged by the rollers, which are irregular, making a quick, clean and tight double seam.

By this arrangement it is also possible to change quickly from the tallest to the smallest can in height, without adding or removing any parts.

This machine is by no means confined to any particular class of work, as it will handle all average sizes and shapes, but may be easily altered in range when required, from 1¼ inches upward.

On square or oblong work, when a good speed is desired, it is preferable, particularly for hermetical sealing, to use a rounded corner not under ⅝ inch radius. For false or blind double seaming, such as is used for cocoa, candy, tobacco or similar packages, or such as are subsequently soldered, smaller corners may be used.

### Specifications

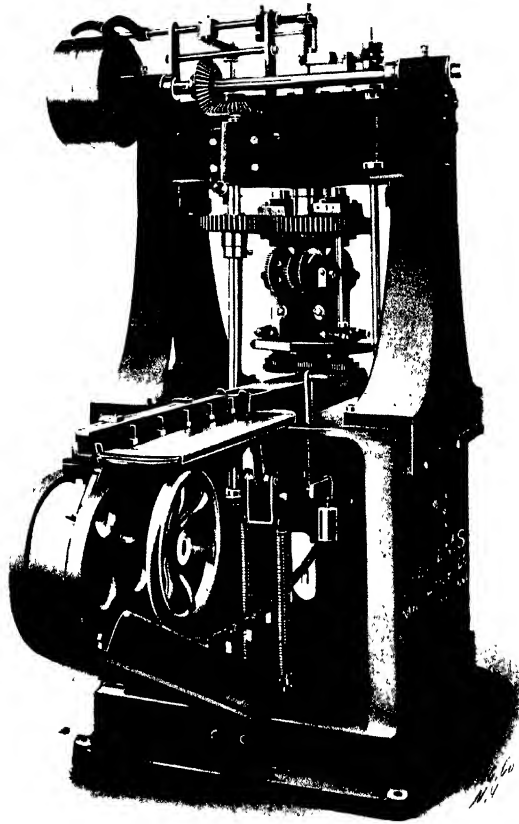
Price complete, T. & L. Pulleys, 12 inches diameter x 3 inches  
face, fitted for one size, any shape. . . . .\$. . . . .  
Price of Countershaft, if wanted. . . . .\$. . . . .  
Price of parts for extra sizes. . . . .\$. . . . .  
Price of Extra Rollers, each. . . . .\$. . . . .  
Capacity, according to size and style. Speed, according to nature of work.  
Floor Space, 52 x 20 inches (132 x 51 cm.).  
Height, 64 inches. Net Weight, 1,880 pounds.

### Shipping Crate

5 feet long, 2 feet 4 inches wide, 6 feet high.  
Cubic Measure, 70 feet (2 cbm.).  
Gross Weight, including Countershaft, about 2,200 pounds (998 kg.).



MOUNT VERNON, N.Y.



PATENTED

No. 32 Automatic Double Seamer



## THE MAX AMS MACHINE CO.

### No. 32 Automatic Double Seamer

#### For Sardine or Condensed Milk Cans

This Automatic Double Seamer is the latest machine for condensed milk cans or sardine cans. It has a capacity of from 30 to 36 per minute.

The feed table is ample to accommodate six or more cans at a time, and as they pass under the chuck, the can is engaged by the rollers, and a uniform perfectly tight double seam is effected (as an equal amount of pressure is exercised on each can), after which the can is discharged from a chute into a suitable receptacle.

Any boy or girl can operate this machine.

No. 32 Double Seamer is the best machine made for this particular class of work.

#### Specifications

Price fitted complete for one size can.. . . .	\$. . . . .
Extra Double Seaming Rollers . . . . .	\$. . . . .
Driving Pulley, T. & L., 10 inches.	
Speed, 720 revolutions per minute.	
Floor Space over all, F. & B. and R. & L. 7 feet x 4 feet.	
Height over all, 6 feet 4 inches.	Net Weight, about 2,750 pounds.

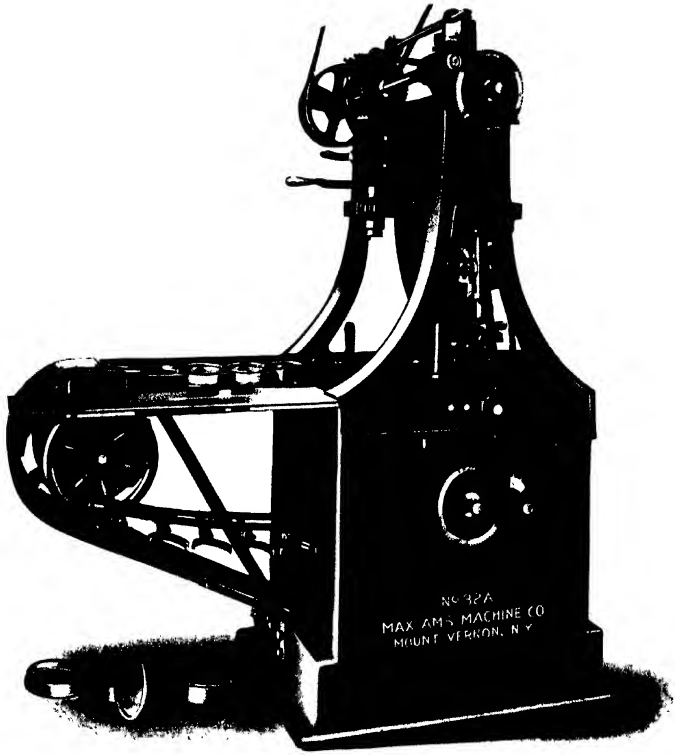
#### Shipping Crate

6 feet 8 inches long, 4 feet wide, 6 feet 8 inches high.  
Cubic Measure, 177 feet (5 cbm.).  
Gross Weight, 3,200 pounds (1,440 kg.).



MOUNT VERNON, N.Y.

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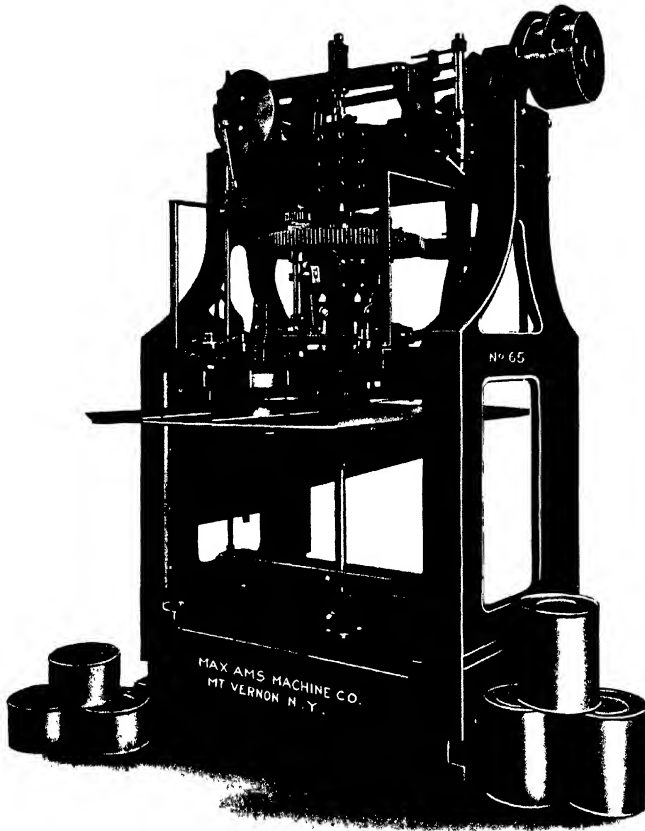
PATENTED

**No. 32A Automatic Double Seamer**

**For Sardine or Condensed Milk Cans**



THE MAX AMS MACHINE CO.



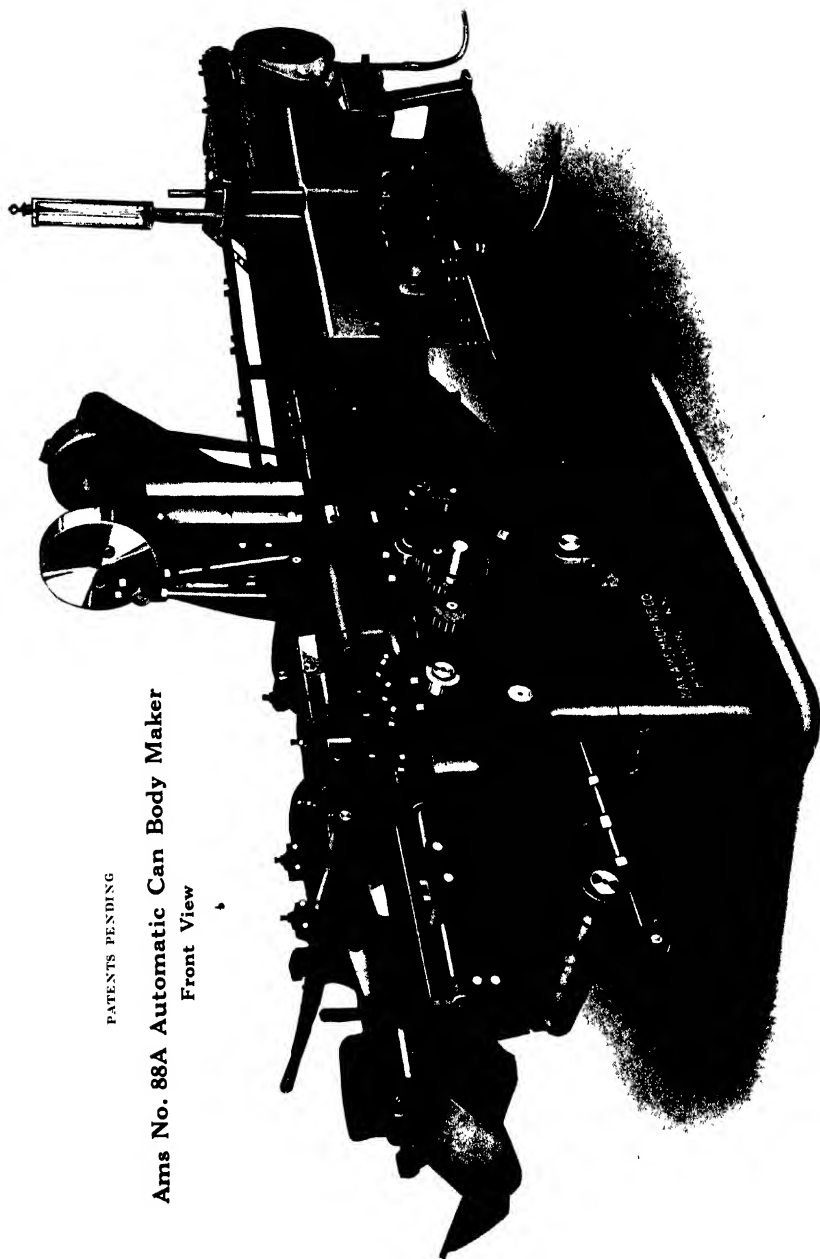
PATENTED

Ams No. 65 Double Seamer  
For Large Cans



PATENTS PENDING

**Ams No. 88A Automatic Can Body Maker**  
**Front View**





## THE MAX AMS MACHINE CO.

### Ams Automatic Can Body Makers With Notching and Soldering Attachments

These machines are entirely new in design and have many original features. They are very compact and carefully designed, are easy running and work with great rapidity and accuracy. Vibration is entirely eliminated by properly timing and balancing the movements.

All working parts are open and easily accessible. A damaged blank can instantly be removed at every station, by simply lifting the friction bars. The feed delivers the blank positively square to the forming horn.

Notcher and Edger are very simple and work positive. Punches, Dies and Edging Plates have separate adjustments to take up the wear and can be quickly replaced when necessary.

The Forming Horn is supported on both sides, insuring a proper grooved lock seam. The expansion of the Horn can be varied either way to suit the size of the covers.

Adjustment of the Edger and Notcher is made simultaneously by turning a single crank. The forming parts (consisting of horn, wings, brackets, rods and cam) are furnished adjusted, and only require exchanging. This is done in very short time.

Soldering attachment is very efficient. The liquid solder is applied to the cans from underneath, by means of a roll in a positive manner. The can is then passed on to the wiper and over the cooling pipe. Adjustment from one size to the other is quickly made.

These machines will handle round and irregular shaped can bodies and are particularly adapted for the production of Sanitary Can Bodies (lap and lock seam). They are made in two sizes.

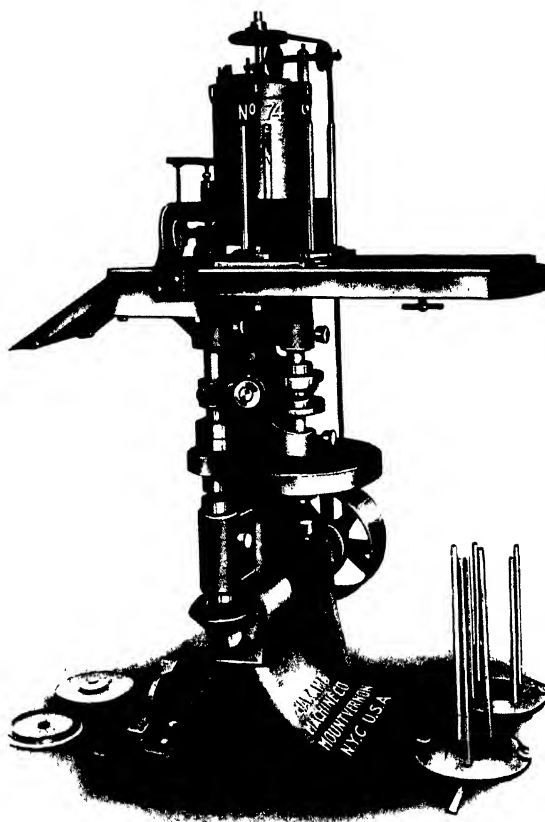
	No. 88A	No. 89
Will take work in diameter.....	2½ in. to 4¼ in.	2½ in. to 6½ in.
Will take up to (lengths).....	6 in.	7¼ in.
Diameter and width of flywheel.....	21 in. x 3¼ in.	24 in. x 3½ in.
Revolutions per minute.....	150—250	150—300
Capacity per minute about.....	75—125	50—100

Gross Weight complete 4,650 pounds.

Net weight complete 3,700 pounds. Cubic feet 178, 50 cbm., 2,106 kg.



MOUNT VERNON, N.Y.



PATENT PENDING

Ams No. 74 Lining Machine



## THE MAX AMS MACHINE CO.

### Ams No. 74 Lining Machine

#### Automatic Feed for Round Covers

The illustration on the other side shows a new *Lining Machine*, used for the purpose of applying compound to the flange of the can covers.

It also shows the can ends stacked in the magazine ready to be fed automatically under the compound feeding-nozzle from the bottom of the stack.

The capacity of this No. 74 Lining Machine is from 60 to 100 per minute, according to the size of the covers.

The machine is very compact, easily changed from one size end to another and adjusted, and very simple in operation. It will line covers from 2 inches to 6½ inches, outside diameter when curled.

#### Specifications

Net Weight, 575 pounds.

Height, 57 inches.

Floor Space, 36 x 30 inches.

Driving Pulley, 10 inches.

Speed, 220 R. P. M. for 60 large dia. ends per minute.

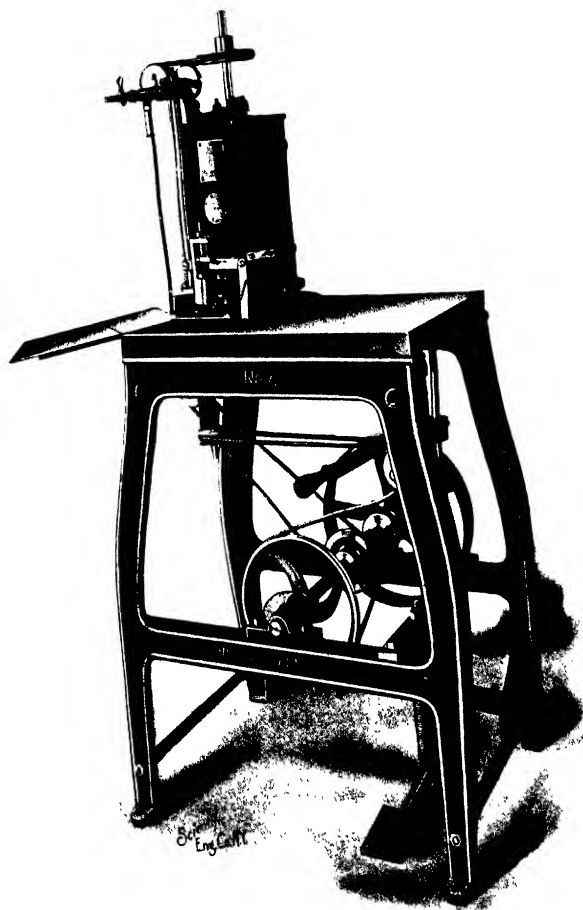
Speed, 370 R. P. M. for 100 small dia. ends per minute.

Cubic Measure, 75 feet (2 cbm.).

Gross Weight, 725 pounds (335 kg.).



MOUNT VERNON, N.Y.



PATENTED

Ams No. 75 Lining Machine



## THE MAX AMS MACHINE CO.

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### No. 75 Lining Machine

#### For Round, Square and Irregular Shapes

This machine is a modification of our Automatic styles, embodying, however, all the advantages of those. It is arranged to take covers of any size, which are fed by hand in a horizontal position. Its capacity is limited only by the quickness of the operator and size of cover, but of average sizes, say from 2 to 6 inches (50-150 mm.), it will easily handle from 15 to 20 per minute.

An Air Pressure outfit is required to control the flow of the Compound. To accelerate the drying of the covers, a Drying Conveyor, 14 feet long, containing  $1\frac{1}{4}$  inch pipes for steam or gas connection, is used. This Dryer also contains a Chain Conveyor to carry off the covers into a proper receptacle when finished.

#### Specifications

Price with Dryer Conveyor complete.....\$.....  
Net Weight of Liner, 380 pounds.  
Floor Space, 36 x 30 inches (92 x 76 cm.).  
Height, 57 inches.  
Driving Clutch Pulley,  $14\frac{1}{2}$  inches diameter x  $2\frac{1}{2}$  inches face.  
Speed,  $4\frac{1}{4}$  inches diameter cover, 80 to 85 R. P. M.  
Capacity, according to size and shape.

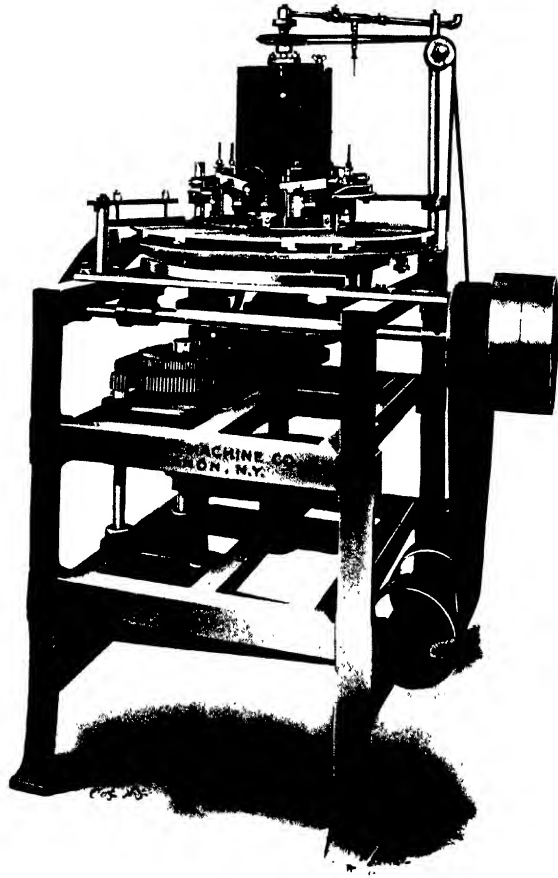
#### Shipping Crate

4 feet long, 2 feet 9 inches wide, 5 feet high.  
Cubic Measure, 55 feet (2 cbm.).  
Gross Weight, 750 pounds (337 kg.).



MOUNT VERNON, N.Y.

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PATENTED

Ams No. 100 Automatic Gang Liner



## THE MAX AMS MACHINE CO.

### **No. 100 Automatic Gang Liner For Round, Square and Irregular Shapes**

This machine is used for lining covers with the Compound necessary to obtain airtight joints. The flow of Compound is automatically regulated, a given quantity only being fed to each cover as same is brought in position under nozzle.

The lined covers are quickly discharged by multiple plates into the Conveyor Dryer, from which, without further handling, they drop into suitable receptacles ready for immediate use, or may be stored for an indefinite time.

It will handle all diameters, including gallons and has a capacity of from 35 to 40 covers per minute.

A suitable air pressure outfit to obtain a steady flow of Compound will be required.

#### **Specifications**

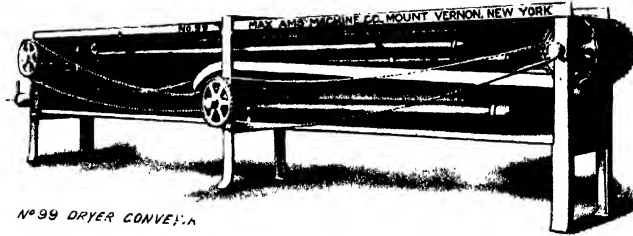
Price, including Conveyor Dryer.....\$.....  
Capacity from 2000 to 2400 covers per hour (average sizes).  
Net Weight, 940 pounds. Driving Pulley, T. & L., 10 x 3 inches.  
Speed, 80 R. P. M. Floor Space, 36 x 36 inches (92 x 92 cm.).  
Height, 60 inches.

#### **Shipping Crate**

4 feet 6 inches long, 3 feet 11 inches wide, 5 feet 5 inches high.  
Cubic Measure, 95½ feet (3 cbm.).  
Gross Weight, about 1200 pounds (550 kg.).



MOUNT VERNON, N.Y.



**No. 99, 14-foot Improved Dryer Conveyor**

Fitted to run by either gas or steam.

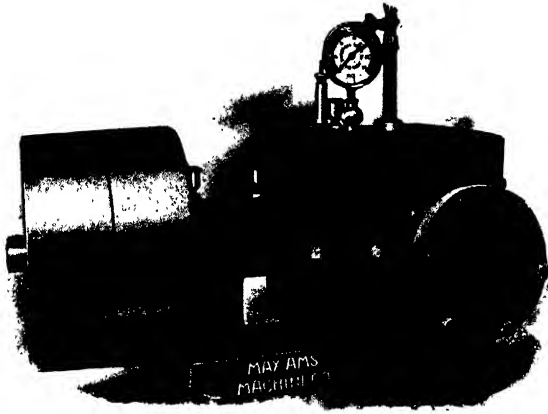


**No. 99 A, Dryer Conveyor**

This conveyor is similar to the above, only that the frame is encased in wood, and the pipes are for steam heat only.

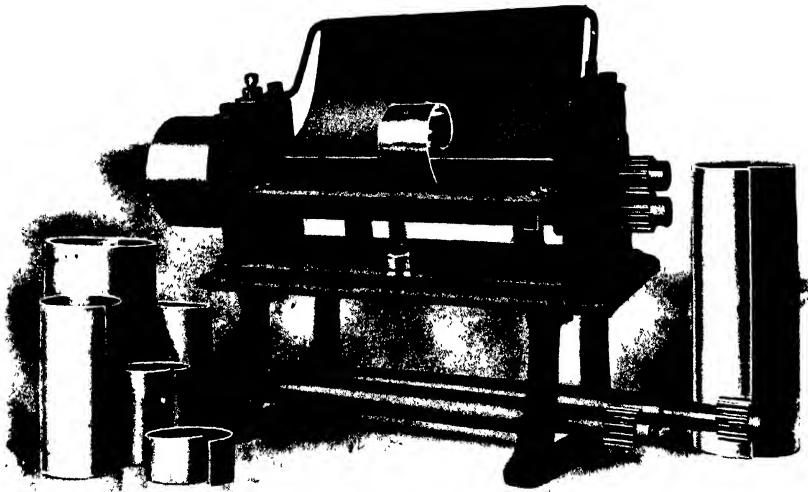


THE MAX AMS MACHINE CO.



**No. 13 High Pressure Air Pump**

Designed for use in connection with our Lining Machines.

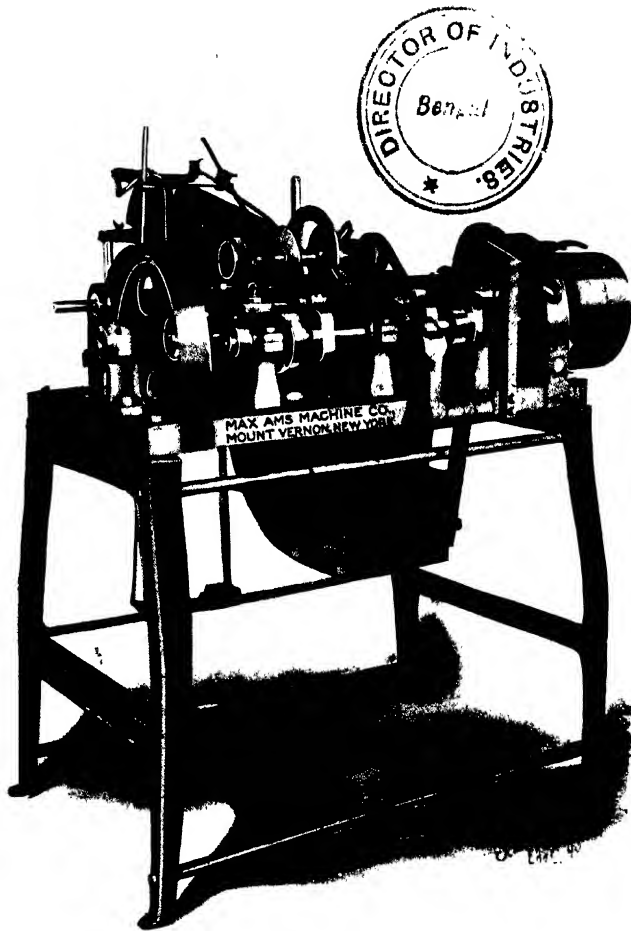


**No. 6 Adjustable Power Former**

Capacity of over 50,000 bodies per day of ten hours.



MOUNT VERNON, N.Y.

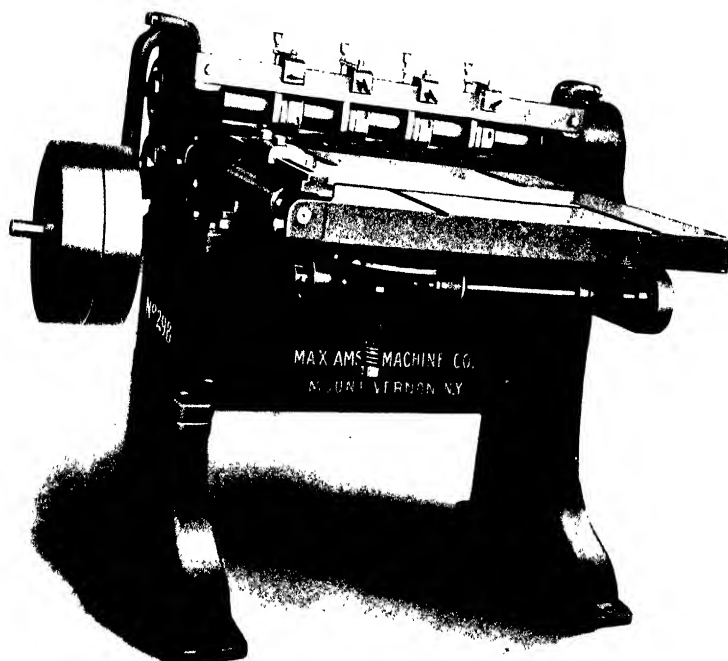


**No. 15 Automatic Adjustable Flanger**

Will take up to  $6\frac{1}{4}$  inches diameter, and 8 inches high.



THE MAX AMS MACHINE CO.



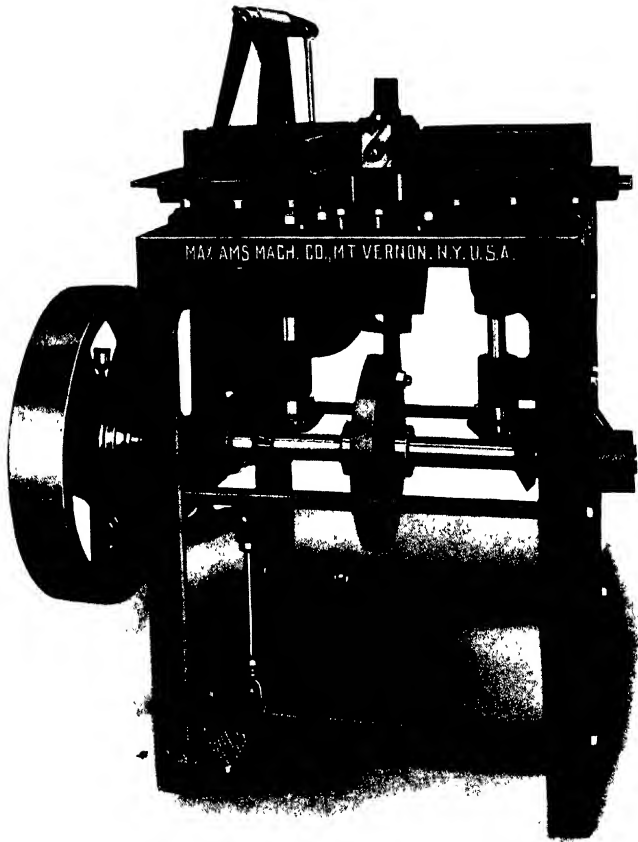
PATENTS PENDING

**Ams No. 29B Gang Slitter**

Will handle sheets 31 inches and strips 2 inches and upward. Positive accuracy. No vibration. Perfect adjustments.



MOUNT VERNON, N.Y.



PATENTED

**Ams Automatic Flanger No. 61**  
**For Sardine Cans**



## **THE MAX AMS MACHINE CO.**

### **Ams No. 61 Automatic Flanger For Sardine Cans**

This Flanger is designed especially for flanging bodies for oil or mustard sardine cans. It flanges both ends outward in one operation and is capable of turning out 40 and upward per minute according to skill of operator.

This machine may be altered to flange bodies intended for soldered key opening device.

It is compact and does not require much more room than an ordinary sewing machine. It is a machine that should receive the investigation of every progressive canner.

#### **Crate Measure**

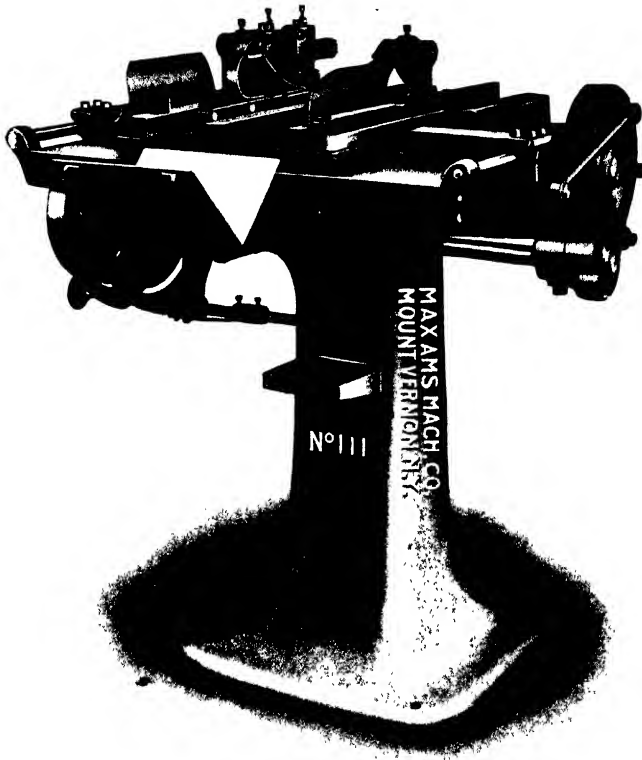
3 feet 7 inches long, 2 feet 10 inches wide, 4 feet, 1 inch high.

Net weight, 804 pounds.

Gross Weight, 1,034 pounds.



MOUNT VERNON, N.Y.

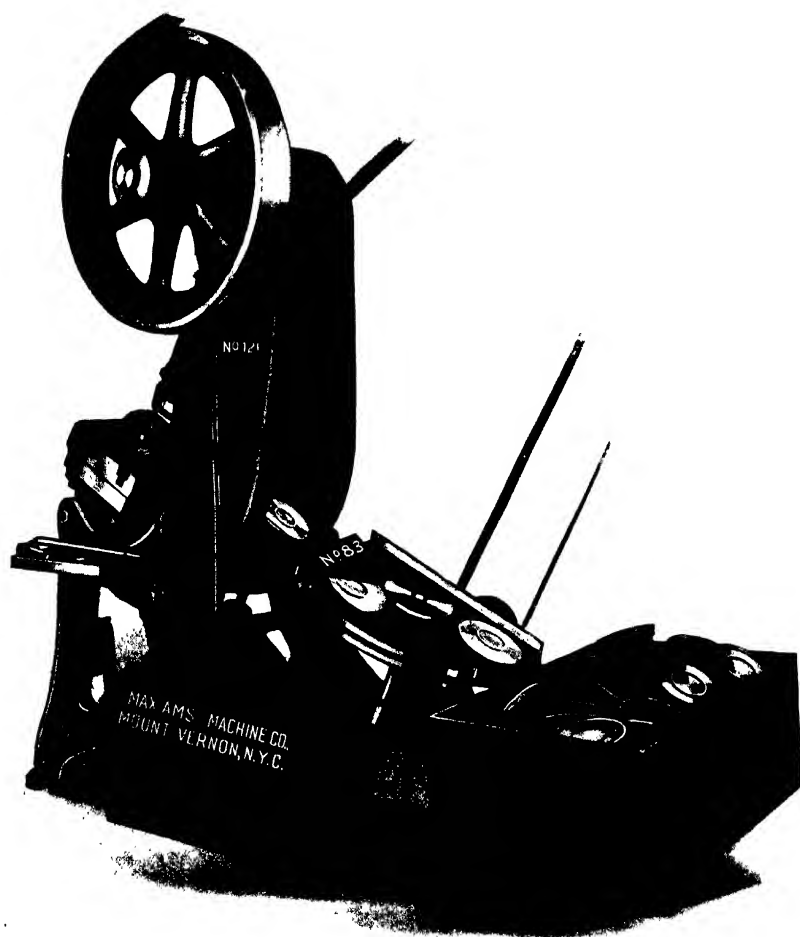


Ams No. 111 Notching Machine



THE MAX AMS MACHINE CO.

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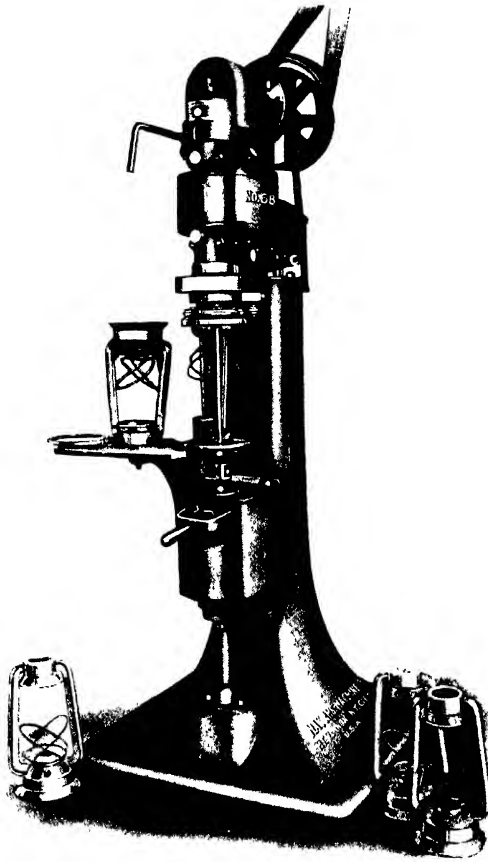


**No. 126 Inclinable Power Press, with No. 83 Cover  
Curling Attachment**



MOUNT VERNON, N.Y.

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Ams No. 68 Double Seamer  
Long frame.



THE MAX AMS MACHINE CO.



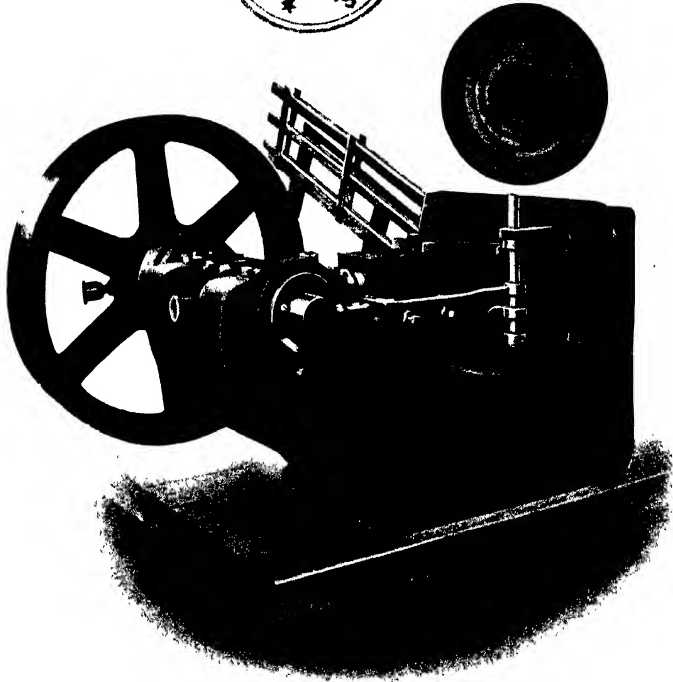
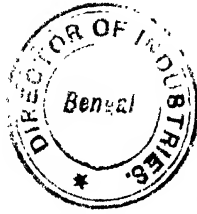
PATENTED

**Ams No. 37 Bottle Capper**

Caps bottles 12 inches high and 10 inches diameter.



MOUNT VERNON, N.Y.



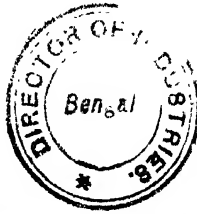
**No. 116 Dating Machine**

Will register any combination of dates, serial numbers or other private marks.



## THE MAX AMS MACHINE CO.

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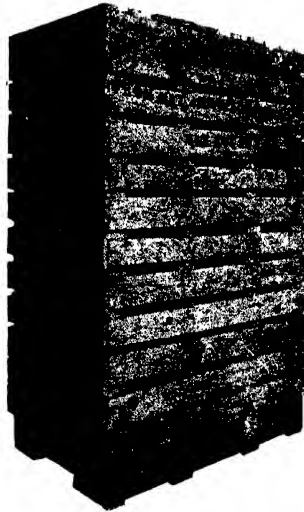


### Dies

#### Round, Square, Oblong and Irregular Shapes

The above illustration shows a round Combination Die, with an ingenious stripper arrangement which prevents clinging of the sheet to the punch, thereby giving operator freedom of action, and increasing the stamping capacity.





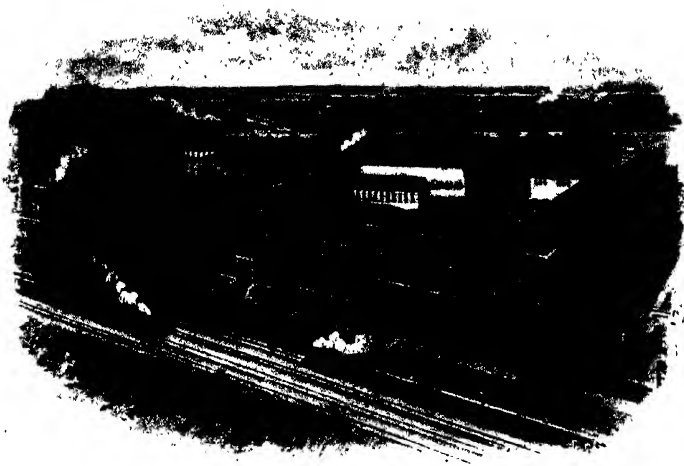
### **How Ams Double Seamers Are Crated**

By removing the four bolts on the lower corners the frame is freed from the machine



**THE MAX AMS MACHINE CO.**

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**Plant of The Max Ams Machine Co.  
Mount Vernon, New York, U. S. A.**







BLANCHARD PRESS  
NEW YORK











